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IVAN MURRAY JOHNSTON

(1898-1960)

Donovan S. Correll (Renner, Texas)

I have never met anyone who displayed more zest for life and living than did Ivan Murray Johnston. He was so replete with physical and mental energy that it is difficult for me to recall any appreciable length of time wherein he was absolutely inactive while I was in his company. Even in his quiet reading one could sense, and at times hear, his forceful deliberations and evaluations of the author's sagacity or fatuity. His was a brilliant, complicated and, to some, controversial personality.

On our trips westward through Texas, Ivan, as he was known to his friends, could scarcely wait until we reached the 100th meridian, for it was here that he considered the west really began, and he once again would be entirely at home. He would stand on a ridge among his beloved plants, fling wide his capacious arms as if to engulf the very country, itself, and, looking up at the great fleecy western clouds, he would extole the virtues of a country where one still had room to stretch.

Indeed, from the break of day when, with both hands filled with lotion, he would vigorously douse himself and saturate the atmosphere, to the last gentle wheeze and vibrant snore at night, a day in the field with Ivan was one to remember.

Perhaps he was never so happy as when standing on a barren-looking gypsum flat discussing the wealth of plants that he knew to grow there. He would excitedly describe such places with a faint undertone of nostalgia, doubtless harkening back to his younger days when he spent so many months in the deserts of northern Chile with only his native guides for companions. I never expect during the rest of my life to visit even a fraction of the expanse of deserts over which Ivan led me during our several forays together.

He had a remarkable faculty for turning what at first appeared would be a routine and tedious maneuver into a vibrant and sparkling experience. As I stood with him at Horsehead Crossing on the treacherous Pecos River, at gushing Escondido Spring in the brushlands of Pecos County, at rustic Fort Belknap in forests along the Brazos River, and at other points along the old Butterfield Stage route he would, through his telling, bring alive again the days of the past, and I could almost hear the creak of wheels, the rattle of harness, and the high call of the coachman. The man had the heart of a poet.

Ivan was a fortunate combination of classroom- and field-botanist. He excelled in both capacities. His first botanical collecting was confined to his native California, and he often decried the destruction and "development" in recent years of the Palm Springs area where he often camped in his younger days. In his early years his

explorations took him to South America, Panama, Mexico and Southwest United States, and, after a considerable period of field inactivity, he again ventured into Mexico and throughout Texas. Although I had known Ivan since my graduate days at Harvard in 1933, it was during this last period of field exploration, at intervals from 1957 through 1959, that it was my privilege and pleasure to be his companion in the field and become better acquainted with his genius.

Ivan Murray Johnston (1940)

Ivan not only mastered the field of botany, but he was also familiar with many interrelated subjects, especially geology. One might well conclude that botany was merely a source of livelihood since his strongest love was reserved for butterflies. For these insects he had only words of endearment. He would become esthetic over some especially beautifully marked creature and call it affectionately by its scientific name, which he knew as well as all its common epithets. He spoke often of his early interest in, and collections of, butterflies, and of his hope, after retirement, to spend some more time with them.

He had a mind that was gigantic in the field of botany and, according to some of the foremost botanists living today, he was perhaps the most qualified American botanist to teach the subject of world floras. It is regrettable that in recent years few students had an opportunity to profit by his great knowledge and experience. It can truly be said of him that with his death a real teacher and philosopher, in the basic sense of the word, passed from among us.

Although in his last years he was not accorded the best of treatment by some of his colleagues, he always managed to keep a well-balanced and keen sense of humor. It also might be said that association with some of his colleagues during the latter years brought out certain characteristics that were alien to his naturally genteel disposition. He could, however, as many well know, give as hard as he received when the matter of principle was involved.

Ivan, through scholarly work, became during his lifetime a foremost authority on the family Boraginaceae. Perhaps no greater accolade could have been accorded him than the recent statement by one of America's foremost botanists to the effect that Ivan's earliest works on the Boraginaceae stand as firmly today as when they were first published. We can be assured that his many papers published in the interim are just as sound. One of Ivan's colleagues in Utrecht writes of him, "We have always considered him to be a really first rate taxonomist and the people working on the Boraginaceae here assure me that they greatly admire his publications on this subject."

He was not only an excellent and accomplished botanist, but he was also attracted to other fields of learning. He was especially interested in art and literature, and he was an excellent conversationalist, though at times a little argumentative. His adventurous spirit revealed itself when he would vividly describe such events as his first plane flight in 1929 from London to Berlin. He was aware and awake to beauty in all its forms, and he thoroughly enjoyed companionship.

It was not generally known that Dr. Johnston planned to retire from Harvard University in 1961 and join the staff of Texas Research Foundation. It is regrettable that his death occurred so prematurely. His science library is now a part of the library of Texas Research Foundation. Perhaps his last manuscript is that concerned with the Boraginaceae for the FLORA OF TEXAS, which is to be published during 1961.

Dr. Johnston was born in Los Angeles, California, on February 28, 1898, to William M. Johnston, a prominent physician, and Dora Etta Farnsworth Johnston. Both of his parents were of sturdy pioneer stock who had first settled in Ness County, Kansas, before going to California in 1895.

After attending public schools in Los Angeles he received his A. B. from the University of California at Berkeley in 1920, where he received Highest Honors in Botany, and his M. A. in 1922. In 1925, he received his Ph. D. from Harvard University, after which he was a Sheldon Travelling Fellow in Chile during 1925-1926.

From 1922 to 1931, Dr. Johnston was an assistant at the Gray Herbarium of Harvard University, where he developed a great admiration for Drs. B. L. Robinson and M. L. Fernald, and from 1931 to 1938 he was a Research Associate at the Arnold Arboretum, where he served as Associate Director from 1948 to 1953. He became Associate Professor of Botany at Harvard in 1938, a position he held until death overtook him at the age of 62 at his home in Jamaica Plain, Massachusetts, on May 31, 1960.

The United States Government cited him for his patriotic work during World War II as a research consultant to the Chemical Warfare Service in Panama where he risked his life to study the effects of gases on defoliation of jungles.

Dr. Johnston travelled widely in North and South America in connection with his studies of the flora of the southwest United States, the Intermontane Plateau of northern Mexico and the Andes. He was a specialist on the plants of the Andes as well as of the Boraginaceae on a worldwide scale. He carried out some of his first studies in Europe during 1927 and 1929-1930.

He was a member of Sigma Xi, the American Academy of Arts and Sciences, the American Society of Plant Taxonomists, the Botanical Society of America, the New England Botanical Club, the American Society of Naturalists, and the American Association for the Advancement of Science. He was also a corresponding member of the Argentina Society of Natural Science and the Chilean Society of Natural Science.

Dr. Johnston is survived by his wife, the former Mildred Semva Williamson; a son, William M. Johnston, now a graduate student at Columbia University; and a daughter, Mrs. Frederick Milleker, of Paris, France.

BOTANICAL PUBLICATIONS

Ivan M. Johnston

1918

Some undescribed plants from southern California. Bull. So. Calif. Acad. Sci. 17: 63-64.

A few notes on the botany of southern California. Bull. So. Calif. Acad. Sci. 17: 64-66.

1919

Contributions on southern Californian botany. Bull. So. Calif. Acad. Sci. 18: 18-21.

The flora of the pine-belt of the San Antonio Mountains of southern California. Plant World 22: 71-90 and 105-122.

1922

Undescribed plants from Baja California. Univ. Calif. Pub. Bot. 7: 437-446.

The distribution of southern California Pteridophyta (with P. A. Munz). Am. Fern Jour. 12: 101-122 and 13: 1-7. 1922-3.

Miscellaneous notes on plants from southern California, I-IV (with P. A. Munz). Bull. Torr. Bot. Cl. 49: 31-44. 1922; 49: 349-359. 1923; 51: 295-302. 1924; 52: 221-228. 1925.

1923

Studies in the Boraginaceae, — 1. Restoration of the genus Hackelia. 2. The genus Antiphytum. 3. Novelties and new combinations in the genus Cryptantha. 4. A synopsis and redefinition of Plagiobothrys. Contr. Gray Herb. Harvard Univ. 68: 43-80.

Diagnoses and notes relating to the Spermatophytes chiefly of North America. Contr. Gray Herb. Harvard Univ. 68: 80-104.

1924

The penstemons of southern California (with P. A. Munz). Bull. So. Calif. Acad. Sci. 23: 21-40.

Expedition of the California Academy of Sciences to the Gulf of California in 1921. The Botany. Proc. Calif. Acad. Sci. ser. iv, 12: 951-1218.

Studies in the Boraginaceae II. 1. A synopsis of the American native and immigrant Borages of the subfamily Boraginoideae. 2. A tentative classification of the South American Coldenias. Contr. Gray Herb. 70: 1-61.

Taxonomic records concerning American Spermatophytes. 1. Parkinsonia and Cercidium. 2. New or otherwise noteworthy plants. 3. A neglected paper by Jean Louis Berlandier. 4. On the validity of Molina's scientific names. Contr. Gray Herb. Harvard Univ. 70: 61-92.

Studies in the Boraginaceae III. 1. The Old World Genera of the Boraginoideae. 2. Notes on miscellaneous Boraginaceae. Contr. Gray Herb. Harvard Univ. 73: 42-78.

On some South American Proteaceae. Contr. Gray Herb. Harvard Univ. 73: 41-42.

New plants collected by Mrs. Richard C. Curtis in Portuguese West Africa. Contr. Gray Herb. Harvard Univ. 73: 31-40.

1925

The potentillas of Southern California (with P. A. Munz). Bull. So. Calif. Acad. Sci. 24: 5-25.

Studies in the Boraginaceae IV. The North American species of Cryptantha. (Doctorate Thesis). Contr. Gray Herb. Harvard Univ. 74: 1-114.

The Oenotheras of northwestern South America (with P. A. Munz). Contr. Gray Herb. Harvard Univ. 75: 15-23.

Further new plants collected by Mrs. Richard C. Curtis in tropical Africa. Contr. Gray Herb. Harvard Univ. 75: 23-26.

Some undescribed American Spermatophytes. Contr. Gray Herb. Harvard Univ. 75: 27-40.

Studies in the Boraginaceae V. 1. Concerning the range and identity of certain American species. 2. New or otherwise interesting Asiatic Borages. Contr. Gray Herb. Harvard Univ. 75: 40-49.

1926

Some notes on the Chilean relatives of Plantago patagonica. Rev. Chilena Hist. Nat. 30: 13-18.

1927

Studies in the Boraginaceae VI. 1. A revision of the South American Boraginoideae. Contr. Gray Herb. Harvard Univ. 78: 1-118.

1928

Studies in the Boraginaceae VII. 1. The South American species of Heliotropium. 2. Notes on various Boraginoideae. Contr. Gray Herb. Harvard Univ. 81: 1-83.

Some undescribed American Spermatophytes. Contr. Gray Herb. Harvard Univ. 81: 85-98.

The botanical activities of Thomas Bridges. Contr. Gray Herb. Harvard Univ. 81: 98-106.

1929

A new Chilean plant and some nomenclatural changes. Rev. Chilena Hist. Nat. 33: 25-27.

A collection of plants from the high cordilleras of San Juan (Argentina). Physis, Buenos Aires, 9: 297-326.

Papers on the flora of northern Chile. 1. The Coastal flora of the departments of Chanaral and Taltal. 2. The flora of the Nitrate Coast. 3. Undescribed species from the cordilleras of Atacama. Contr. Gray Herb. Harvard Univ. 85: 1-172.

Some undescribed species from Peru. Contr. Gray Herb. Harvard Univ. 85: 172-180.

1930

Studies in the Boraginaceae, VIII. 1. Observations on the species of Cordia and Tournefortia known from Brazil, Paraguay, Uruguay and Argentina. 2. Taxonomic notes concerning various Borages. Contr. Gray Herb. Harvard Univ. 92: 1-95.

Some notes on the flora of northern Chile. Rev. Chilena Hist. Nat. 34: 228-234.

1931

The flora of the Revillagigedo Islands. Proc. Calif. Acad. Sci. ser. iv, 20: 9-104.

New spermatophytes from Mexico and Argentina. Contr. Gray Herb. Harvard Univ. 95: 53-55.

Vascular flora of the guano islands of Peru. Contr. Gray Herb. Harvard Univ. 95: 26-35.

1932

New records for the flora of the Nitrate Coast. Rev. Chilena Hist. Nat. 36: 4-8.

Studies in the Boraginaceae, IX. 1. The Allocarya section of Plagiobothrys in the western United States. 2. Notes on various Borages of the western United States. Contr. Arnold Arboretum 3: 1-102.

1935

Studies in the Boraginaceae, X. The Boraginaceae of northeastern South America. Jour. Arnold Arboretum 16: 1-64.

Studies in the Boraginaceae, XI. 1. The species of Tournefortia and Messerschmidia in the Old World. 2. Notes on Brand's treatment of Cryptantha. 3. New or otherwise noteworthy species. Jour. Arnold Arboretum 16: 145-205.

Boraginaceae. Manual of So. Calif. botany, by P. A. Munz, pp. 417-436.

The flora of San Felix Island. Jour. Arnold Arboretum 16: 440-447.

1936

A study of the Nolanaceae. Proc. Amer. Acad. Arts and Sci. 71: 1-87.

Boraginaceae. Pulle's Flora of Suriname 4(1): 306-333.

1937

Studies in the Boraginaceae, XII. 1. Trigonotis in southwestern China. 2. Novelties and critical notes. Jour. Arnold Arboretum 18: 1-25.

1938

Notes on some Astragalus species of Ecuador and Peru. Jour. Arnold Arboretum 19: 88-96.

Some undescribed species from Mexico and Guatemala. Jour. Arnold Arboretum 19: 117-128.

The species of Sisyrinchium in Uruguay, Paraguay and Brazil. Jour. Arnold Arboretum 19: 376-401.

New or noteworthy plants from temperate South America. Jour. Arnold Arboretum 19: 248-263.

1939

New phanerogams from Mexico. Jour. Arnold Arboretum 20: 234-240.

New Fuchsias from southern Peru. Jour. Arnold Arboretum 20: 241-244.

The preparation of botanical specimens for the herbarium. Jamaica Plain, Mass. 1939. 1-33, 5 pl.

Studies in the Boraginaceae, XIII. New or otherwise noteworthy species, chiefly from western United States. Jour. Arnold Arboretum 20: 375-402.

1940

New phanerogams from Mexico, II, III. Jour. Arnold Arboretum 21: 67-75, 253-265.

Studies in the Boraginaceae, XIV. Miscellaneous species from Asia, Malaysia and America. Jour. Arnold Arboretum 21: 48-66.

Studies in the Boraginaceae, XV. Notes on some Mexican and Central American species of Cordia. Jour. Arnold Arboretum 21: 336-355.

The floristic significance of shrubs common to North and South American deserts. Jour. Arnold Arboretum 21: 356-363.

1941

Gypsophily among Mexican desert plants. Jour. Arnold Arboretum 22: 145-170.

New phanerogams from Mexico, IV. Jour. Arnold Arboretum 22: 110-124.

Preparacion de ejemplares botanicos para herbario. Traducido del Ingles al Castellano por H. R. Descole y C. A. O'Donell. Tucuman. 1941. 1-49, 6 pl.

El significado floristico de los arbustos comunes a los desiertos norte y sudamericanos. Revis. Argent. Agron. 8: 114-121.

Bibliographic data concerning Gay's Flora de Chile. Darwiniana 5: 154-165.

1942

Boraginaceae. In Kearney, T. H. & Peebles, R. H. Flowering plants and ferns of Arizona. Washington. 740-761.

1944

Plants of Coahuila, eastern Chihuahua, and adjoining Zacatecas and Durango, I-V. Jour. Arnold Arboretum 24: 306-339, 375-421. 1943; 25: 43-83, 206-214, and 431-453. 1944.

Publication dates of Gaudichaud's botany of the voyage of the Bonite. Jour. Arnold Arboretum 25: 481-487.

1945

A phytogeographic sketch of Latin America (with A. C. Smith). In Verdoorn's Plants and plant sciences in Latin America, pp. 337-349.

The vegetation of San José Island, Perlas group, Republic of Panama. Chemical Warfare Service, San José Project Report 87: 1-104 and 88: 1-50.

1946

Heliotropium piurense sp. nov. Am. Journal of Botany 33: 479.

1947

Astragalus in Argentina, Bolivia and Chile. Jour. Arnold Arboretum 28: 336-409.

1948

Noteworthy species from Mexico and adjacent United States, II. Jour. Arnold Arboretum 29: 193-197.

Studies in the Boraginaceae, XVI. Species chiefly from Mexico and western United States. Jour. Arnold Arboretum 29: 227-241.

1949

Studies in the Boraginaceae, XVII. 1. Cordia section Varronia in Mexico and Central America. 2. The identity of species proposed by Sessé & Mociño. Jour. Arnold Arboretum 30: 85-110.

Studies in the Boraginaceae, XVIII. Boraginaceae of the southern West Indies. Jour. Arnold Arboretum 30: 111-138.

The Botany of San José Island, Gulf of Panama. Sargentia 8: 1-306.

1950

Studies in the Boraginaceae, XIX. 1. Noteworthy species from tropical America. 2. Cordia Gerascanthus in Mexico and Central America. Jour. Arnold Arboretum 31: 172-187.

Noteworthy species from Mexico and adjacent United States, III. Jour. Arnold Arboretum 31: 188-195.

1951

Studies in the Boraginaceae, XX. Representatives of three subfamilies in eastern Asia. Jour. Arnold Arboretum 32: 1-26, 99-122.

Studies in the Boraginaceae, XXI. Sino-Indian species of Onosma. Jour. Arnold Arboretum 32: 201-225, 344-368.

1952

Studies in the Boraginaceae, XXII. Noteworthy species, chiefly Asian and South American. Jour. Arnold Arboretum 33: 62-78.

Studies in the Boraginaceae, XXIII. A survey of the genus Lithospermum. Jour. Arnold Arboretum 33: 299-366.

1953

Studies in the Boraginaceae, XXIV. Three genera segregated from Lithospermum. Jour. Arnold Arboretum 34: 1-16.

Boraginaceae in the Flora of Trinidad and Tobago 2: 191-209.

Boraginaceae in J. A. Steyermark, Contributions to the flora of Venezuela. Fieldiana (Botany) 28: 511-512.

Studies in the Boraginaceae, XXV. A revaluation of some genera of the Lithospermeae. Jour. Arnold Arboretum 34: 258-299.

1954

Studies in the Boraginaceae, XXVI. Further revaluations of the genera of the Lithospermeae. Jour. Arnold Arboretum 35: 1-81.

Studies in the Boraginaceae, XXVII. Some general observations concerning the Lithospermeae. Jour. Arnold Arboretum 35: 158-166.

1956

Studies in the Boraginaceae, XXVIII. New or otherwise interesting species from America and Asia. Jour. Arnold Arboretum 37: 288-306.

Botany in C. R. McCullough, I. M. Johnston & J. M. Parker, Terrain study of the Panama Canal Zone with special reference to the Fort Sherman area and vicinity. North Carolina State College, Department of Engineering Research. 1-267.

1957

Studies in the Boraginaceae, XXIX. Echiochilon and related genera. Jour. Arnold Arboretum 38: 255-293.

Boraginaceae in J. A. Steyermark, Contributions to the Flora of Venezuela. Fieldiana (Botany) 28: 1080-1082.

1959

Studies in the Boraginaceae, XXX. Some noteworthy American Borages. Wrightia 2: 13-22.

In press

Studies in the Boraginaceae, XXXI. Notes on some Texan Borages. Wrightia (in press).

Boraginaceae in C. L. Lundell, Flora of Texas (being edited).

THE 1960 MEETING OF THE EDITORIAL COMMITTEE OF THE INTERNATIONAL CODE OF BOTANICAL NOMENCLATURE

A. C. Smith (Washington, D. C.)

In accord with its instructions from the IXth International Botanical Congress, held at Montreal in August 1959, the Editorial Committee charged with preparing and editing a new edition of the International Code of Botanical Nomenclature met for this purpose in Brussels from November 3 to 9, 1960. For the preceding year its members had been corresponding concerning the decisions taken at Montreal and had studied a first draft of the new edition, exchanged comments, etc. Consequently the Brussels meeting proceeded smoothly and the Committee was able to complete this phase of its task during its seven-day deliberations. Members present at Brussels were: J. Lanjouw (Utrecht), chairman; W. Robyns (Brussels); R. Ross (London); J. Rousseau (Montreal and Paris); J. M. Schopf (Columbus); G. M. Schulze (Berlin); A. C. Smith (Washington); and F. A. Stafleu (Utrecht), secretary. Miss W. Keuken, of the I.A.P.T. staff in Utrecht, took notes and recorded decisions. Unable to attend the meeting because of other commitments were Ch. Baehni (Geneva) and R. de Vilmorin (Paris); however, they will act with Robyns and Rousseau as a subcommittee

to prepare the French text. The German text will be prepared by Schulze in collaboration with some of his Berlin colleagues. English was the working language of the Committee at Brussels, but many digressions referring to the appropriate wording of translations were made.

The Editorial Committee at Meise, near Brussels, on 6 November 1960. Front (left to right): A. C. Smith, W. Robyns, Miss W. Keuken, J. Lanjouw, G. M. Schulze, back: J. Rousseau, R. Ross, F. A. Stafleu, J. M. Schopf.

(*Photograph by A. Robyns*)

The Committee deeply appreciated the hospitality of Dr. Robyns, not only for his kindness in providing a meeting place in his office at the Jardin Botanique de l'Etat, but also for the many necessary advance preparations, the provision of such agreeable touches as afternoon refreshments, and for much guidance and hospitality during the week. The work of the Committee at Brussels was greatly facilitated by the careful preparation of a first draft by Dr. Stafleu, and by detailed planning for the meeting by him, Dr. Lanjouw, and Miss Keuken. The general expenses of the meeting, including the travel of European members, were provided by a grant from the International Union of Biological Sciences; travel of the two U.S. members was made possible by a grant from the National Science Foundation to the International Association for Plant Taxonomy. The Committee and the I.A.P.T. wish to express appreciation of this financial aid.

It is expected that the new edition of the Code will be printed during the course of 1961, but in anticipation of its appearance plant taxonomists may be interested in knowing some of the general results of the Brussels meeting. The tenor of the Section of Nomenclature at Montreal having been somewhat conservative, the Committee agreed to retain the arrangement of the present (1956) edition, including the

numbering of most of the Articles. The directives of the Section were incorporated and revisions of wording were adopted as needed. On the whole, the Committee feels that it has made no sweeping changes and is pleased that the new edition will be entirely recognizable as a conservative successor to the Code adopted at Paris in 1954 (1956 edition).

Among significant changes may be mentioned the elimination of Appendix II (Special provisions concerning fossil plants), the provisions of which will now be incorporated directly into the appropriate Articles and Recommendations of the Rules as directed by the Congress. Another rearrangement of some significance will be found in Chapter II, Section 2, dealing with typification. In keeping with comments and suggestions made by members of the Section of Nomenclature at Montreal, this Section of the Rules has been rearranged in what the Committee hopes is a more logical manner, but the effect of the changes will be minor.

A more important change will be found in Chapter III, Section 1, and elsewhere, since the Committee followed its directive from the Congress to indicate that the principles of priority and typification do not affect the form of names of taxa above the rank of family.

Chapter IV, Section 2, dealing with the conditions and dates of valid publication of names (Articles 32-45), has been rearranged in a more logical sequence, without any basic changes in the implications of the Articles and Recommendations. Similar changes in the sequence of Articles 62-72 (Chapter V, Section 6) were made, but the Committee was careful to confine its changes within the directives of the Congress.

As to general arrangement, the new edition will contain parallel official versions in English, French, and German. The title-page will retain its present format, and the table of contents will be placed at the beginning. Appendix I (Names of hybrids and some special categories) will remain essentially unchanged. Appendix II, as mentioned above, will be deleted. Appendices IV (Determination of types) and V (Guide to the citation of botanical literature) will be printed not as appendices but as "guides", since their provisions are not mandatory; however, they will follow Appendix I immediately after the appropriate language versions. The present Appendix III (Nomina generica conservanda et rejicienda), since it does not require translation, will follow the German text but will be preceded by a new Appendix II, dealing with the conserved names of spermatophyte families. A comprehensive index, a key to the numbering of Articles and Recommendations in recent editions, and a bibliography will conclude the new edition, as they do the 1956 one.

Among special matters taken up by the Editorial Committee may be mentioned two that it was instructed to consider by the Montreal Section on Nomenclature. A note was drafted discussing the words "description" and "diagnosis" as they are used in the Code and especially in Chapter IV, Section 2. The Committee also considered the Section's directive to study and report on Article 67, dealing with "monstrosities". The results of these considerations will be published later in Taxon and referred to the next Congress.

To take advantage of the presence in Brussels of several members of two other international Committees, meetings were held on Saturday afternoon and evening (November 5) of: (1) officers of the Botanical Section of I.U.B.S., including Dr. George Taylor (Kew) to meet Prof. Lecrenier (Gembloux) to discuss the relations between I.U.B.S. and the International Society for Horticultural Science; and (2) the Executive Committee of the I.A.P.T.

Social occasions were not lacking, as Editorial Committee members utilized their limited free time to visit points of interest in Brussels, of which there are many; one need mention only the Jardin Botanique de l'Etat itself, the famous Grand'Place, the

site of the recent World's Fair, and many museums, churches, and restaurants. On Sunday, November 6, Dr. Robyns was host to the group at the site of the new Jardin Botanique, aided by his colleague Dr. F. M. H. Demaret and his son, M. André Robyns. This new site, a former Royal estate of 225 acres, is located at Meise, about 10 kilometers from Brussels. The visitors were impressed by the excellence of the site and the planning already effected by Dr. Robyns; an impressive and beautiful series of greenhouses, covering 2½ acres with glass, is completed and partially occupied by specimens moved from the present Garden. A herbarium-library-administration building, in a beautifully modern architectural style, is half-completed. Other existing buildings that add grace to the rolling and partially wooded landscape are a picturesque chateau dating from 1130 and an attractive orangerie now redecorated as a modern restaurant, at which the visitors were graciously served dinner by their host. A museum is in the planning stage, as are numerous plantings and arrangements of cultivated herbs and shrubs. One may be certain that within a few years there will exist, here at Meise, a Botanical Garden unsurpassed for beauty and completeness.

The "Palais des Plantes" under construction at the Meise botanical garden.

(*Photograph by A. Robyns*)

On the final day of its meeting, November 9, the Committee completed its editorial task soon after noon and departed for the nearby city of Louvain, seat of the famous University of Louvain. With Dr. Robyns, a Professor of this University, as their guide, the Committee became tourists to see some of the interesting and historic sites, culminating in a tour of the famous Town Hall, where they were hospitably

received by a group of aldermen and other city officials. To complete this extremely pleasant day, Dr. and Mrs. Robyns, with their son André, entertained the group with a farewell dinner at their gracious home.

Of particular potential interest to plant taxonomists was a document drafted by H. W. Rickett (New York), A. C. Smith (Washington), and F. A. Stafleu (Utrecht), which was discussed at length by the Editorial Committee and unanimously accepted in principle by those members present at Brussels. Because of its import, the modified document is herewith reproduced as a recommendation of the Editorial Committee:

The Editorial Committee of the International Code of Botanical Nomenclature wishes to sponsor proposals to the next International Botanical Congress which would have, as their objective, the effect of preventing modification and amendment of the Code at such brief intervals as those between International Botanical Congresses (normally five years). The Committee is convinced that:

(1) The time that normally elapses between the publication of a new edition of the Code and the date for submission of proposals to modify or amend it (presently less than two years) is inadequate. In this period a new edition cannot be satisfactorily used and tested, nor can botanists become familiar with its regulations or its sequences, nor can they adequately compare it with past editions and reflect upon the implications of changes.

(2) The appearance of a new edition of the Code every four or five years, in which the arrangement of Articles is frequently different and the numbering disparate, leads to instability in nomenclatural methods and serves to bring taxonomy into disrepute in the eyes of other scientists.

(3) Procedures presently followed at nomenclature sessions of International Botanical Congresses do not permit sufficient time for the mature assessment of proposals to modify or amend the Code, and hurriedly taken actions often have deplorable results.

(4) As a result of wholesale reference of debatable points to an Editorial Committee, this Committee often has an unwelcome authority to make decisions that effect nomenclatural methods; its work is too demanding to attract the needed concentration and effort from busy and experienced taxonomists.

(5) Alternate International Botanical Congresses could well be used by the Section of Nomenclature to discuss important matters in an unhurried manner, without the stress caused by the need of reaching prompt and binding decisions.

In view of the above considerations, the Editorial Committee intends to present the following proposals to the next International Botanical Congress:

(1) Future International Botanical Congresses should convene a Section of Nomenclature with authority to propose modifications of or amendments to the Preamble and Divisions I and II of the International Code of Botanical Nomenclature no more frequently than at alternate Congresses, unless the interval between two Congresses is at least eight years.

(2) The Section of Nomenclature of the Xth International Botanical Congress will act as a forum on pertinent nomenclatural matters but will not consider modifications of or amendments to the Preamble and Divisions I and II of the International Code of Botanical Nomenclature, except for modifications or amendments that might result from consideration of the general problem of the stabilization of specific names, and from the reports of Committees appointed by the IXth International Botanical Congress.

If these proposals should prove acceptable to the Section of Nomenclature of the Xth International Botanical Congress, that Section would be free of the stresses inevitably accompanying legislative recommendations to a Congress. In an atmosphere of relaxation and good will, the Section could:

(a) Hear the reports of Nomenclature Committees and reconstitute these Committees for the next inter-Congress period.

(b) Act upon the recommendations of Nomenclature Committees including those for the conservation of certain family and generic names.

(c) Discuss the "neotype problem" left unsolved at Montreal.

(d) Discuss all aspects of the problem of the stabilization of the specific names of important economic plants, with the background of the anticipated Report from the I.A.P.T. staff on the status of names of plants of major economic importance.

(e) Contemplate at leisure the possible solutions to other problems, with a view to the presentation to a later Congress of nomenclature proposals that would be assured of careful preparation and of the approval of a majority of botanists.

* * *

The Editorial Committee has referred the above argument and proposals to the General Committee on Botanical Nomenclature, requesting that an advisory opinion be obtained from those qualified for a preliminary mail vote under the terms of Division III, Provision 4, of the International Code of Botanical Nomenclature, in the immediate future.

FLORA MALESIANA TEN YEARS YOUNG

M. Jacobs (Leiden)

There were a reporter and two photographers among the nearly 40 persons present at an informal meeting in the Director's room in the Rijksherbarium, Leiden, in the afternoon of 21 October, 1960. They had gathered to celebrate the fact that ten years before, in a bare whitewashed room somewhere in the township of Bogor, Java, two men put their signature on a sheet of paper. On that hot sleepy afternoon in 1950 there were no onlookers, no newsmen and no photographers. One of the two men was a notary, the other was a botanist, one Dr. C. G. G. J. van Steenis. With their signatures, the Foundation Flora Malesiana had come into existence.

The one botanical person of 1950 has, so to speak, multiplied considerably. Next to him and his wife (author of the Cyclopedia of Plant Collectors in Malaysia, currently named "The Green Bible", and her husband's indefatigable supporter) sat now Dr. R. E. Holttum, editor of Flora Malesiana series II (Ferns; first instalment a year old), and Dr. R. van der Wijk (series III, Mosses). The regular staff working on series I (Phanerogams) in the Rijksherbarium consists at present of 5 botanists and several part-time collaborators are busy in Leiden and other herbaria.

A survey of what they have achieved within the ten years at issue, was soon to be given by the host of the party, Professor Dr. H. J. Lam, in one of the witty speeches for which (among other things) he is famous. He presented Dr. and Mrs. Van Steenis with the first copy of a bibliography prepared by staff member Dr. P. W. Leenhouts, who compiled a list of all publications that owe their existence more or less directly to the Flora Malesiana. This bibliography (to be published in

"Blumea") consists of an impressive list of over 450 items, printed on about 8,000 pages, illustrated by some 1,600 figures, and a great number of portraits. It included not only the 3 big volumes of the work proper that have hitherto been issued (over 2,500 pages), but also the Flora Malesiana Bulletin, the Identification Lists, and precursory papers in several periodicals. Of these 450 entries, no less than 192 were written by Dr. Van Steenis himself, and the number of the remaining ones he has not gone through and thoroughly criticized ("it must stand for 100 years at least and therefore I aim at nothing but quality") can safely be neglected. The number of families dealt with amounts to 135; half that number has already been completely revised, by 66 authors in total.

... "and Mrs. Van Steenis, the only person in the world he ever listens to." Miss Ruth van Crevel relating a remark once made by the botanist Dr. Tualang. Dr. Van Steenis sits between his wife and Dr. Holttum.

Nearly twice that number of people stand as authors of the two green-bound volumes which were presented to Dr. and Mrs. Van Steenis by the staff. These volumes form together an "Album Amicorum", for which all known friends of the Flora Malesiana had been asked to put a personal contribution on paper. Containing over 120 entries by as many botanical personalities, this Album Amicorum has become a singularly surprising piece of work. Noteworthy contributions: a series of 6 fables (by Agnopus), an extract of the diary made during a trip with young Dr.

REPUBLIC OF TAXONOMIA
MINISTRY OF DELIMITATION AND SYNONYMY

ALBUM AMICORUM

BEING

AN ILLUSTRATED ALPHABETICAL ACCOUNT OF FRIENDS OF THE FLORA MALESIANA , INCLUDING KEYS TO CHARACTERS , SOME OF THEM EVEN DIAGNOSTIC , FULL OF DESCRIPTIONS , REFERENCES TO THE PAST , GOOD WISHES FOR THE FUTURE , AND JOKES OF THE WORLD'S WILD AND CULTIVATED BOTANISTS

UNPUBLISHED

UNDER THE AUSPICES OF THE FLORA MALESIANA STAFF HAPPILY WORKING IN THE RIJKSHERBARIUM / LEYDEN / NETHERLANDS

PREPARED

ON AN INTERNATIONAL COOPERATIVE BASIS BY MANY PEOPLE WORKING UNDER THE SUPERVISION OF SEVERAL DIRECTORS OF BOTANIC GARDENS / KEEPERS OF HERBARIA / AND BY VARIOUS PROMINENT BOTANISTS FOR THEMSELVES

ON THE OCCASION OF

THE TENTH ANNIVERSARY OF THE FOUNDATION FLORA MALESIANA / IN ORDER TO EXPRESS ESTEEM AND FRIENDSHIP TO THE

SERIES I VOLUME 1

GENERAL EDITORS
DR. C. G. G. J. VAN STEENIS
AND
MRS. M. J. VAN STEENIS-KRUSEMAN

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Title-page of the Album Amicorum. Compare it with the Flora Malesiana title-page.

Van Steenis (his first) to the Anambas and Natuna Islands (by Mr. Henderson), the figure 146,757, being the number of specimens lent to the Rijksherbarium for study by Flora Malesiana specialists (carefully calculated by Messrs. Wieringa and Groenewegen, heads of the technical department of the Rijksherbarium), the sentence "Editori Florae Malesianae et Suae Mulieri Congratulationes", expressed by means of dried flowers (by Professor Hegnauer). Finest portrait: Professor Hultén. Professor Van Steenis's comment: "This is the most fantastic and incredible thing you could ever have given me".

Students who attended his regular lecture the next morning (this time on the so-called Massenerhebung-effect) agree that it was more brilliant and inspired than anything they had heard in their life.

A NEW PHOTOGRAPHIC RECORD OF THE LINNAEAN HERBARIUM

William T. Stearn (London)

Since 1829 the Linnaean Herbarium, the major collection of dried specimens of plants assembled by the Swedish naturalist Carl Linnaeus (1707-78), has been in the keeping of the Linnean Society of London. Contrary to general belief it came to the Society neither by gift nor bequest. The Society bought it from the executors of Sir James Edward Smith (1759-1828) in order to make its contents permanently available to botanical scholars, thereby incurring a heavy financial debt which handicapped the Society for many years. The passing of time has in no way diminished the importance of this public-spirited act, for the Linnaean Herbarium remains, as Smith, then its owner, said in 1788, "a fund of information not easily to be exhausted" regarding the application of Linnaean botanical names, even though there are many Linnaean specimens in other herbaria (cf. Stearn, 1957). As a further service to scholarship the Linnean Society has now sponsored the issue of photographs in microfiche form of all the specimens of the Linnaean Herbarium. According to a statement by B. Daydon Jackson, the latter contains 13,832 sheets of plants as well as a number of zoological specimens. These were listed in 1912 in Jackson's *Index to the Linnean Herbarium* and in more detail in 1945 in Spencer Savage's *Catalogue of the Linnaean Herbarium*, which are valuable guides both to what the Herbarium contains and to what it lacks but which need to be supplemented by photographs.

Linnaeus believed his herbarium to be the biggest the world had ever seen. "Herbarium Linnaei maximum quod vidit orbis", he wrote in his autobiography. Although this boast was not entirely justified, the Linnaean Herbarium being about one eighth the size of the herbarium amassed earlier by Sir Hans Sloane (1660-1753) and the specimens themselves inferior in quality to those of his contemporary Albrecht von Haller (1708-77), nevertheless it is much more important for modern science than either of these other historically interesting collections on account of its intimate relation to Linnaeus's botanical works. His *Species Plantarum* (1753) is the internationally accepted starting point for modern botanical nomenclature, and is hence the book to which systematic botanists must turn to ascertain the original use of some 5,900 Linnaean specific names. Since Linnaeus used his herbarium continuously as a source of information when writing the *Species Plantarum* and subsequent works, his collections must in turn often be consulted when interpreting the names published in his works. The intent of Linnaeus's major botanical works was not simply to publish such names but to provide means of determining the genera and

species with which they were to be associated. Hence the *Genera Plantarum* (1st ed., 1737; 5th ed., 1754, facsimile, 1939, 1960) consists of carefully drafted and systematically arranged descriptions leading to the genera, while the *Species Plantarum* (1st ed., 1753, facsimiles, 1907, 1934, 1957-59; 2nd ed., 1762-63) gives diagnostic phrases (also called polynomials, phrase-names, *nomina specifica legitima*) distinguishing one from another the species of every genus not monotypic. These are supplemented often by references to earlier literature and sometimes by a description. The phrase-name, such as *Justicia foliis lanceolato-ovatis integerrimis, pedunculis dichotomis*, accompanying the specific epithet (trivial name, *nomen triviale*), such as *nasuta*, was based normally on a specimen in Linnaeus's own herbarium or in some other herbarium studied by him, e.g. the Burser herbarium at Uppsala or Hermann's Ceylon herbarium now at the British Museum (Natural History), London, or on a published illustration when no good specimen was available, for rarely indeed did Linnaeus trust by itself the description or phrase-name of another author sufficiently to base a name of his own upon it. As phrase-names are comparative, like the contrasting statements or leads of a dichotomous key, Linnaeus had to have concrete evidence before his eyes when drafting them. The Linnaean Herbarium was thus absolutely necessary to his work and accordingly supplies helpful indications of his intent even though the specimens present cannot always be accepted as nomenclatural types; indeed it would be highly misleading to accept uncritically a certain specimen in the Linnaean Herbarium as a type simply because it may have been in Linnaeus's possession at a given time, e.g. at the publication of the *Species Plantarum;* his adoption of a phrase-name published earlier may indicate that his concept of a particular species had a different origin. If there is no change of phrase-name, then there can be no change of type. Thus the acceptance in the *Species Plantarum* (1753) of a phrase-name from the *Flora Lapponica* (1737) as a specific diagnosis clearly indicates a Lapland plant as the type of the species even though in the *Species Plantarum* its distribution may be stated as being 'in Alpibus Lapponiae, Helvetiae, Britanniae'; the most important repository of authentic Linnaean specimens typifying the *Flora Lapponica* is the Lapland herbarium given by Linnaeus to J. Burman which is at the Institut de France, Paris. Similarly a phrase-name adopted without change from the *Flora Suecica* (1745) indicates a Swedish plant as the basis of the *Species Plantarum* concept, even though the actual Swedish specimen may no longer exist.

Sometimes the specimen in the Linnaean Herbarium is the undoubted holotype of a Linnaean species, i.e. when Linnaeus knew the species from a single specimen and nothing else and based his account (protologue) entirely upon this specimen. A few examples are *Cinna arundinacea, Justicia purpurea, Salvia nutans, Gladiolus imbricatus* and *Nardus ciliaris*. Sometimes he based his species entirely upon illustrations and accompanying text published by Petiver, Plumier, Feuillée, Catesby, and others and himself possessed no specimen. A few examples are *Datura arborea, Ipomoea digitata, Piper acuminatum, Sagittaria trifolia* and *Adiantum philippense*. Often, however, Linnaeus's account includes not only a specially drafted phrase-name but also references to literature, notably to Linnaeus's own *Flora Lapponica* (1737), *Hortus Cliffortianus* (1738), *Flora Suecica, Flora Zeylanica* (1747), and *Hortus Upsaliensis* (1748), Gronovius's *Flora Virginica* (1739-43) and the works of Clusius, C. Bauhin, J. Bauhin, l'Obel, Plukenet, Ray, Sloane, Tournefort and Dillenius. Here the problem of typification is more difficult. It is essentially a matter of deciding which one, out of several elements covered by the whole account, provided the information expressed in the phrase-name. This element may or may not be a specimen now in the Linnaean Herbarium but the material there has at any rate to be considered. For this reason monographers and others engaged in critical taxonomic studies have long appreciated the need to examine personally the relevant specimens in the Lin-

naean Herbarium, or to obtain photographs of these, inevitably a time-losing and costly business when merely one or two specimens are in question. The only satisfactory procedure is for taxonomic institutions of standing to possess a set of photographs of the whole Herbarium. The microfiches now make these available.

For specific distinction Linnaeus used, whenever possible, constant easily observed characters of the leaves and inflorescence; hence from a photograph it can usually be easily determined in conjunction with the relevant literature whether a given specimen exhibits the characters expressed in a phrase-name and can be accepted as the nomenclatural type. A photograph also provides a quick means of deciding what a specimen is not; in other words it will indicate whether the Linnaean material is relevant to a particular investigation. Admittedly further critical study may reveal the need in some instances to examine the specimen personally for the presence of characters not hitherto used and not evident in a photograph, but even in such instances a photograph may be very helpful during preliminary work and save fruitless enquiry.

Through the enterprise of the late Professor E. D. Merrill and with the generous financial support of the Carnegie Foundation of New York, a microfilm of the Linnaean Herbarium was made in 1941 while the Herbarium was at the Tring Museum, to which it had been evacuated as a precaution against damage or destruction by bombing in London. Mr. Spencer Savage, then the Linnean Society's Librarian and Assistant Secretary, added numbers to the sheets, for reference purposes, before they were photographed. Had the Herbarium been thereafter destroyed, this microfilm would have been a most valuable record of its contents, but enlargements made from it do not reveal all the details possible, and a number of annotations on the backs of sheets were overlooked during its preparation. Nevertheless it enabled Savage to compile his *Catalogue*, published in an edition of 250 copies by the Linnean Society in 1945. This fine piece of war-time Linnaean scholarship could not be prepared directly from the Herbarium, owing to the circumstances of the time, but Savage was able to overcome that difficulty by means of a simple home-made microfilm viewer ingeniously devised by Mr. W. H. T. Tams, of the Department of Entomology, British Museum (Natural History), and constructed from a cigar box, an electric light bulb and flex, and a pocket lens of 8 magnification. Using this, in his own home, evening after evening for nearly two years, by careful and thorough scrutiny of the microfilm, Savage at last produced his *Catalogue*. Botanists are permanently indebted to him for his industry and his erudition in attributing therein the handwritings which occur in the Herbarium. The microfilm does not, however, adequately meet the needs of taxonomic botanists.

The Council of the Linnean Society accordingly entered into association in 1958 with the International Documentation Centre AB, Hågelby House, Tumba, Sweden for the making of a new photographic record of high quality, which would faithfully and clearly record details not evident in the war-time microfilm, by using a special system of individual illumination and a film of very fine grain. This was done under my general supervision, as Botanical Curator of the Linnaean Collections, by Mrs. H. de Mink with the aid of students on vacation, Miss J. Whyte and Miss J. Wacksmann and, for a short time, Mr. John R. Alder, between 11 July 1959 and 29 August 1959. The text of Savage's *Catalogue* relevant to the group of specimens illustrated on a particular microfiche was photographed at the same time. Since Linnaeus usually recorded information on the backs of sheets, Mrs. de Mink and her helpers examined the back of each sheet and photographed all the annotations. This revealed a number unrecorded in Savage's *Catalogue*, for the reasons explained there on pp. v, vi. The task proved a slow and tedious one owing to the care with which the specimens had to be handled and the adjustments of camera and illumination necessary to

capture fine detail; the excellence of the results is a tribute to feminine patience and fortitude. It could not, however, have been undertaken but for a substantial interest-free loan to the Linnean Society by the Nuffield Foundation. The aim of the Linnean Society has been to make the contents of the Linnaean Herbarium known to interested persons everywhere for the benefit of botanical scholarship and hence the Society has tried to keep the price of the microfiche record as low as possible; this has worked out at £ 100 sterling (U.S. $ 282.00) a set, including 20 'microboxes' to contain the 856 microfiches. The International Documentation Centre, Stockholm, acts as the Society's agent for the sale of these and all enquiries and orders should be addressed to the Centre.

Linnaeus began to form his herbarium when a student at Lund in 1727-28. By the autumn of 1729 he had increased it to about 600 Swedish plants. Later when in Holland and England in 1735-38 he acquired specimens from Virginia, the West Indies and Central America as well as from gardens. By 1753, the year of publication of *Species Plantarum*, his herbarium also included many specimens from the south of France, and elsewhere in Europe, from Siberia, coastal China and India, south-eastern Canada, New York and Pennsylvania, given to him by correspondents and former students. After the publication of the *Species Plantarum* he continued to add specimens, notably from South America collected by Löfling, from Jamaica collected by Patrick Browne, from China, the Cape of Good Hope and elsewhere, collected by Sparrman and others. In all about 150 persons contributed material representative of species now occurring in every continent. Indeed every country now possesses species named originally by Linnaeus; in some places, it is true, they are man-introduced weeds or escapes from cultivation, but they merit study nevertheless. The Linnaean Herbarium from its world-wide scope has a world-wide interest. The issue of microfiches portraying its contents should thus be a major service to systematic botany and it is hoped that many institutions will profit from the present opportunity of acquiring them.

For further information regarding the history and specimens of the Linnaean Herbarium, the following should be consulted:

Jackson, B. D. 1912. Index to the Linnean Herbarium. *Proc. Linn. Soc. London*, Sess. 124, Suppl.

——. 1922. Notes on a catalogue of the Linnean Herbarium. *Proc. Linn. Soc. London*, Sess. 134, Suppl.

Lindberg, H. 1958. Växter, kända från Norden, i Linné's herbarium. *Acta Bot. Fennica* 60.

Merrill, E. D. 1942. Microfilm records of the Linnean Society of London. *Science* n.s. 96: 352-353.

Norman, J. R. 1942. A photographic record of the Linnaean Collections *Proc. Linn. Soc. London*, Sess. 154: 50-57.

Savage, S. 1945. *A Catalogue of the Linnaean Herbarium*. London.

Stearn, W. T. 1957. *An Introduction to the* Species Plantarum *and cognate botanical Works of Carl Linnaeus*, 103-124 (Prefixed to Ray Society's fascimile of Linnaeus, *Species Plantarum*, vol. 1). London.

NOMENCLATURAL REMARKS ON THESIUM RAMOSUM

Radovan Hendrych (Praha)

When carrying out detailed and thorough taxonomic and nomenclatural studies, we frequently find errors in matters of substance, as well as formal details being handed down in literature for a long time. Some of these necessitate nomenclatural changes. One of these cases is that of *Thesium ramosum* HAYNE, which has the largest area of all the species of the genus *Thesium*, spreading from the Tan-Shan Mountains to Central Europe.

According to the present current and established knowledge, this name, and thus also the species itself, entered botanical literature in 1800, when it was published by the German botanist F. G. HAYNE in a paper dealing with the analysis of some plants from German territory. HAYNE in his paper deals, among others with the German representatives of the genus *Thesium*, of which he describes two, *Th. ramosum* (p. 30-32) and *Th. ebracteatum* (p. 32) as new species. The description of the first species, in which we are now interested, is correct, one may even say precise and clear. However, the loci classici are erroneous; HAYNE accepted these for this species from POLLICH (1776: 239), with whose *Th. alpinum* he quite mistakenly identified his species. HAYNE does not mention any other localities than Lautern (the present Kaiserslautern) and Mehlingen (the present Ober- or Nieder Mehlingen in the neighbourhood of Otterberg). The diagnosis, descriptio and diagnosim differentialem, as well as his drawings (tab. 7.), he based on herbarium material, as he states: "... habe ich nach einem trockenen Exemplare entworfen, von welchem mir aber die Gegend, wo es gesammelt worden, unbekannt ist" (p. 32). To this he adds immediately: "Es stimmt indessen mit der Pollichschen Beschreibung sehr gut überein, ausser dass die Kelche fünf- und vierspaltig seyn sollen. Aber was ist wohl veränderlicher als die Zahl und was lässt sich hierüber von einem Exemplare sagen?".

A further explanation of how HAYNE's mistake occurred is given by ROTH (1800: 29), who proceeded in the same way as HAYNE, but named the same species *Th. palatinum*, with a reference to *Th. alpinum* in the same work of POLLICH. With regard to HAYNE he remarks expressly: "Vivam plantam non vidit cel. HAYNE, sed ex specimine sicco palatino, in plantarum collectione cel. WILLDENOW asservato, differentiam specificam construxit." Thus both authors confused material of two species that are, according to our present knowledge, extremely different.

HAYNE's erroneus identification of his *Th. ramosum* with *Th. alpinum*, as described by POLLICH, led, for a time, also to the mistaken conclusion that *Th. ramosum* was a mere variety of *Th. alpinum*. Such a view was held, e.g., by RUDOLPHI (1801: 215-216), and later applied nomenclaturally, especially by POIRET in LAMARCK (1806: 626), who designated it *Th. alpinum β ramosum*. According to its distribution, as given by him (Switzerland, S. France, the Pyrenees, Auvergne and Barbarie), however, he seems to have had in mind mainly the more richly branched forms of the real *Th. alpinum*. His concept is repeated without change also by LAMARCK and DECANDOLLE (1815: 352). On the other hand, to PERSOON (1805: 211) HAYNE's *Th. ramosum* did not seem to be clear, as he considers it as one of those species which he designates as: "Speciebus obscuris, aut quoad sedem dubiis, vel accuratiori indigationi subiiciendis, signa crucis seu asteriscum apposui" (p. X). Also SCHRADER (1807) in his criticism of THUNBERG's conspectus of the genus *Thesium* (THUNBERG 1806), writes about *Th. ramosum* as a "still dubious" species. ROEHLING (1812: 183) also mentions this species from Germany, and later also REICHENBACH (1830: 158), who mistakenly mentions localities in Germany, besides its actual ones in Moravia and Lower Austria, although MERTENS and KOCH (1826: 284) had solved the whole problem before REICHENBACH in their note on *Th. ramosum*: "Mit *Th. alpinum* hat die gegenwärtige, ausgezeichnete Pflanze wenig gemein, wir sind daher der Meinung, dass das *Th. alpinum β ramosum* DC. Fl. Fr. III. 352 nicht hierher, sondern zur ästigen Abart des wirklichen *Th. alpinum* gehört. POLLICH's *Th. alpinum* wird hier ebenfalls mit Unrecht citiert, an den von POLLICH angezeigneten Standorten wächst das wirkliche *Th. alpinum* in Menge, von *Th. ramosum* aber ist keine Spur zu finden."

It must, however, be emphasized that, except for a few insignificant exceptions, no such mistakes of identity and errors occurred later, and the name *Th. ramosum* HAYNE [(1800) in Journ. Bot. (Schraders) 1: 30, quod diagn. et icon., sed excl. pl. palatin. et syn. *Th. alpinum*] was actually emended by later

authors in the taxonomically correct sense of HAYNE's description and illustration.

In spite of the facts stated above, however, the name *Th. ramosum* HAYNE is not the correct one for the species in question, because, long before HAYNE, this species was validly described and named in 1774 by Sigismund HORVÁTOVSZKY as *Thesium arvense;* it was published in the publication "Flora tyrnaviensis indigena, pars prima" at Trnava (Slovakia) in that year. This Flora remained unfinished and is a rather small book of 47 pages. Besides an introduction (p. 3-8) it contains the first 11 classes (*Monandria - Dodecandria*) of the Linnaean system. Of the author I only know that he came from Bardejov (eastern Slovakia), as the title page bears next to his name the remark: Hungarus Bartphensis e Comitatu Sárosiensi. From his name and place of origin it may be assumed that he was either a Slovak or a Ukrainian. SZINNYEI (1896: 1311-1312) says of him that he was a physician at Bardejov (formerly Bártfa). The Flora of Trnava was his inaugural dissertation paper.

Besides small taxa published partially as nomina nuda HORVÁTOVSZKY described in his Flora three species altogether: *Dactylis polygama* (p. 15) the publication of which and the correctness of the name was pointed out already by DOMIN (1943: 6, 90), who, however, did not know its description from the original, but had taken it from LUMNITZER (1791: 39). HORVÁTOVSZKY further described *Epilobium molle* (p. 37); in the introduction (p. 7) he quotes this erroneously as a nomen nudum under the name *E. mollissimum,* which is obviously a synonym of *E. parviflorum* SCHRADER, published in 1771. Finally, the third described species is *Th. arvense* (p. 27). His diagnosis runs: "*Thesium arvense* — foliis inferioribus integerrimis, lineari-lanceolatis, floriferis 3-phyllis, lacinia media longissima (Signum: planta rara, difficultur reperibilis). Paniculatum floribus solitariis, saepe 4 fidis, jungit Linophyllon et Alpinum in unum". That he referred to *Th. ramosum* is shown by the epithet "arvense", expressing doubtlessly the character of the habitat in which this species is actually found in the vicinity of Trnava *). It is further made evident by the words "lacinia media longissima" referring to the remarkably long bracts found especially in this species, and also by the words "paniculatum floribus solitariis", which also fully confirm this view. The words "jungit Linophyllon et Alpinum in unum" exclude the possibility of the description referring to *Th. dollineri* MURB. ssp. *simplex* (VELEN.) STOJAN. et STEF., which species and subspecies also grows in the vicinity of Trnava. The description also agrees with regard to the fact that the flowers are "saepe 4 fidis", as these are in this species, as compared with others (with the exception of *Th. alpinum*) comparatively frequently 4-fid. The locus classicus is given by the name of the area with which the Flora is concerned, and is, for that time, comparatively definite. This fact may be of great advantage for the future, as *Th. arvense* is a rather variable species compared with other species of this genus, which property and its variation over its total extensive area is very little known. It has not yet been possible to determine the kind of variability concerned. It cannot be excluded as a possibility that sufficient material or a method of direct observation in the field or some other more exact method will lead in the future to a division of the whole species into several subspecies or varieties. With regard to the situation concerning the loci classici in the case of the name of *Th. ramosum* this might cause a considerable, even an unsurmountable, problem.

It is interesting to note that HORVÁTOVSZKY himself does not mention this species in his introduction among species described as new when he writes: "Novas species hic duas habes: *Epilobium mollissimum* et *Dactylim polygamam,* praetereaque raram, nifallor, varietatem *Solani nigri,* cujus necdum facta est mentio". This may be explained by a certain inconsistency with which the book was edited (see the case of *Epilobium molle* contra *E. mollissimum* etc.).

What caused this name, properly published and intelligibly described, to be forgotten for such a long time? As I see it, the reason for it is that the book in which the name appeared dealt with a territory which was, at the time when it was published, of a rather limited regional importance to botanists and was also rather distant from most of them. Later the book must have become very rare; this is definitely the case at present (I know only of two copies: one is in the University

*) FRANTOVÁ (1947) does not mention this species in her study of weeds of the vicinity of Trnava, but I myself know it from herbarium specimens (e.g. prope Modrá, leg. HOLUBY, etc.) and from my own field investigations, during which I checked the occurrence of this species in the mentioned neighbourhood.

Library in Budapest, and the second is in the Botanical Institute of the University of Bratislava). In the regional Floras concerning the territory of Trnava HORVÁTOVSZKY's book is mentioned only in LUMNITZER's Flora of the neighbourhood of Bratislava, and also, by way of LUMNITZER, in ENDLICHER's Flora (1830), who mentions it perhaps only under *Epilobium pubescens* (sub *E. molle* LAM.! !), where he also mentions HORVÁTOVSZKY (p. 367). However, neither LUMNITZER nor ENDLICHER mention *Th. arvense*, and of the genus *Thesium* they mention only *Th. alpinum*, and ENDLICHER also *Th. linophyllon*. NEILREICH (1866/2: VI), who states that he had HORVÁTOVSZKY's book in his hand, mentions from it only *Dactylis polygama* (p. 23) and *Epilobium molle* (p. 311), but not *Th. arvense* at all. The same can be said of KANITZ (1865: 457-458).

One cannot but mention also the views of some authors with regard to HORVÁTOVSZKY's book. Thus LUMNITZER (1791: IV) says: "... videtur mihi Dissertatio illa nihil nisi inchoatam consignationem plantarum in botanico illius temporis Universitatis Regiae horto obviarum exhibere". HABERLE (1830: 17) and later also other authors voice the opinion that the whole of HORVÁTOVSZKY's treatise was actually the work of J. J. WINTERLE, who from 1771 was professor of botany and chemistry at the University of Trnava. HABERLE even states that WINTERLE had written a further part of the work, which, however, remained in manuscript. Nevertheless the fact remains that HORVÁTOVSZKY's book was, for its time, of a very good standard, and it represents the first Flora written according to Linné's system for the territory of Slovakia and of the whole Czechoslovak republic.

The most important conclusions may be summarized as follows:

1) The hitherto-used name *Thesium ramosum* HAYNE (1800) is incorrect according to article 11 of the International Code.

2) The name *Thesium arvense* HORVÁTOVSZKY (1774) is validly published and legitimate, as it conforms with principles III and IV and further with articles 11, 13, 23 and 62, and because it is not in contradiction with any rule regarding the validity and correctness of the name according to the International Code.

3) As there is no authentic type material at our disposal, and it is more than likely that there does not exist any at all, I consider it suitable, on this occasion, to determine, according to article 10, par. 5 of the International Code, a neotype out the topotypes known to me; this neotype is the specimen *Th. arvense*, denoted: "Bazinii (Pezinok): in graminosis siccis "na Bílovisku" — leg. 1.9. 1918, J. L. HOLUBY" and kept in the herbarium of the Botanical Institute of Charles University in Praha (PRC). **)

References

DOMIN, K. 1943. Monografická studie o rodu *Dactylis*. — Acta botan. bohem. 14(1942). — Praha 1943.

ENDLICHER, S. 1830. Flora Posoniensis. — Posonii.

FRANTOVÁ, J. 1947. Flora inutilis, ruderalis adventivaque regionis Tyrnaviae. — Prírod. Sborn. 2: 153-248.

HABERLE, C. C. 1830. Succineta rei herbariae Hungaricae et Transsilvanicae historia. — Budae.

HAYNE, F. G. 1800. Genauere Auseinandersetzung ... — Journ. Bot. Schrader 1: 15-46.

HORVÁTOVSZKY, S. 1774. Flora Tyrnaviensis indigena. Pars prima. — Tyrnaviae.

KANITZ, A. 1865. Versuch einer Geschichte der ungar. Botanik. — Linnaea 33: 491-664.

LAMARCK, J. B. 1806. Encyclopédie méthodique. — Botanique. Tome 7. — Paris.

LAMARCK, J. B. et DE CANDOLLE, A. P. 1815. Flore française. Ed. III., Tome 3. — Paris.

LUMNITZER, S. 1791. Flora Posoniensis ... — Lipsiae.

MERTENS, F. C. et KOCH, W. D. J. 1826. Deutschlands Flora. II. Band. — Frankfurt a. M.

NEILREICH, A. 1866. Aufzählung der in Ungarn u. Slavonien ... — Wien.

PERSOON, C. H. 1805. Synopsis plantarum. Vol. 1. — Paris et Tübingen.

POLLICH, J. A. 1776. Historia plantarum. Vol. 1. — Mannheimii.

REICHENBACH, H. G. L. 1830. Flora germanica excursoria. — Lipsiae.

ROEHLING, J. CH. 1812. Deutschlands Flora. Ed. II. — Frankfurt a. M.

**) The author would be very grateful to collectors or botanists in charge of herbaria for the loan of any quantity of material of the genus *Thesium* from Asia, Europe and North-Africa for the purposes of study and revision. [Botanical Institute of Charles University, Praha 2, Benátská 2, Czechoslovakia.]

Roth, A. G. 1800. Catalecta botanica. Vol. 2. — Lipsiae.

Rudolphi, K. A. 1801. Einige botanische Bemerkungen. — Journ. Bot. Schrader 1: 201-233.

Schrader, H. A. 1807. Referatum. — Neues Journ. Bot. 2/2-3: 181-183.

Szinnyei, J. 1896. Magyar írók. Vol. 5. — Budapest.

Thunberg, C. P. 1806. *Thesium,* quod Dissertatione botanica delineatum . . . Upsaliae.

HARRISIOTHECIUM NOMEN NOVUM

B. Lundblad (Stockholm)

It is a well-known fact that repeated use of the same name for a genus of living and fossil plants may occur in botanical literature. The conditions are well illustrated by Reed's article "Multiple Uses of Some Generic Names of Ferns and Fern-allies, Living and Fossil", published in this journal in 1955. It is certainly not difficult to find similar examples among other groups of plants, and the aim of the present paper is to call attention to one.

The name *Harrisia* was created by the present author for a microspore-bearing fructification from the Rhaetic of Scoresby Sound (Lundblad 1950: 71). Drs. Sergio Archangelsky (Tucumán) and John A. Townrow (Reading) have kindly drawn my attention to the fact that the name *Harrisia* is preoccupied, being previously used by Britton for a member of the *Cactaceae* (Townrow in letter of May 14th, 1960). Further inquiries on my part led to the result that *Harrisia* was published by Britton in Bull. Torr. Bot. Club 35: 561 (1909) [Index Kewensis, Suppl. 4: 103 (1906-1910)].

The generic name *Harrisia* Lundblad should therefore be rejected as a homonym to *Harrisia* Britton, and be replaced by the new name suggested below (Art. 64 in the International Code of Botanical Nomenclature).

Synonymy

Harrisiothecium Lundblad nom. gen. nov.
Harrisia Lundblad 1950: 71.

Type species: *Harrisiothecium marsilioides* (Lundblad) Lundblad comb. nov. = *Harrisia marsilioides* Lundblad.

Harrisiothecium marsilioides (Lundblad) Lundblad comb. nov.

Basionym: *Harrisia marsilioides,* Lundblad 1950: 71 [based on the description in Harris 1932: 122-123; pl. 9; pl. 10, figs. 3-8; pl. 11, figs. 1, 2, 15; text-fig. 52. (Cf. also Harris 1937: p. 36)].

Genus **Harrisiothecium,** nom. nov.

Diagnosis. — Microspore-bearing fructification with a main axis giving off lateral branches in all planes; lateral branches dividing irregularly or dichotomously in all planes, terminal branches bearing oval spore-capsules. Spore-capsules composed of two valves, each bearing, on its inner face and probably embedded in its substance, a number (about seven) of elongated sporangia. Valves of capsules pressed together before dehiscence, diverging widely after. Cuticle of branches rather thick, showing straight-sided, rectangular cells, the cuticle being of similar structure on both sides of the branch. Stomata occurring on branches, but no hairs or hair-cells observed. Cuticle covering outside of capsules thinner than that of branches but quite tough, showing outlines of polygonal cells with straight, very clearly marked lateral walls. Surface of cells neither with central papilla, nor other markings. A variable number of scattered stomata occurring on outer cuticle, but no hair-cells observed. Stomata with sunken, thinly cutinized guard-cells, surrounded by an irregular ring of subsidiary cells. Unspecialized encircling cells situated opposite some of the subsidiary cells. Cuticle of subsidiary cells usually thickened near stomatal pit and bearing a rim of cuticle reducing opening of pit to a round hole. Outer cuticle of synangium extending over margin, then abruptly becoming very delicate, and probably continued over inner face of valve as a delicate cuticle showing cells. Sides and back of sporangia covered with a soft cuticle showing no distinct cell outlines but covered with innumerable dark-staining granules.

Sporangia containing numerous oval microspores, microspore divided transversely into three chambers: surface finely pitted.

Derivation of name. — *Harrisiothecium* is named after Professor T. M. Harris of the

University of Reading, England. The ending thecium is a diminutive from *Θήκη*, a case.

Remarks. — *Harrisiothecium* is monotypic, its only member being *Harrisiothecium marsilioides* from the Rhaetic (*Lepidopteris* Zone) of Scoresby Sound, East Greenland. The generic diagnosis is based upon the specific description by Harris (1932, p. 122-123). The specimen shown in figs. 11-12, pl. 9, and in figs. 1-2, pl. 11 of Harris 1932 ("Slide 1556") should be regarded as the type of *Harrisiothecium marsilioides* (Lundblad) Lundblad.

I am indebted to Mrs. A. Skarby and Dr. E. Wikén for suggestions concerning the formation of the new name, and to Dr. F. A. Stafleu for advice in nomenclatural questions.

References

Harris, T. M. 1932. The fossil flora of Scoresby Sound, East Greenland. Part 3: *Caytoniales* and *Bennettitales*. — Medd. Grønland 85(5): 1-133.

——. 1937. The fossil flora of Scoresby Sound, East Greenland. Part 5: Stratigraphic relations of the plant beds. — Medd. Grønland 112(2): 1-114.

Index Kewensis. Supplementum IV (1906-1910). — Oxford 1913. 252 pp.

Lundblad, A. B. 1950. Studies in the Rhaeto-Liassic floras of Sweden. I. Pteridophyta, Pteridospermae, and Cycadophyta from the mining district of NW Scania. — K. svenska Vetensk. Akad. Handl., ser. 4. 1(8): 1-82.

Reed, S. F. 1955. Multiple uses of some generic names of ferns and fern-allies, living and fossil. — Taxon 4(5): 105-117.

NEW COMBINATIONS IN MOSSES VI[1])

R. van der Wijk et W. D. Margadant (Groningen)

Acroporium megasporum (Dub.) Broth. var. *densum* (Ren. et Card.) Wijk et Marg.

Basionym: *Sematophyllum megasporum* (Dub.) Jaeg. var. *densum* Ren. et Card., Bull. Soc. R. Bot. Belg. 35(1): 321. 1897.

Bestia vancouveriensis (Kindb.) Wijk et Marg.

Basionym: *Thuidium vancouveriense* Kindb., Bull. Torr. Bot. Cl. 17: 277. 1890.

Hygrohypnum molendinarium (Lam. et Cand.) Wijk et Marg.

Basionym: *Hypnum molendinarium* Lam. et Cand., Fl. Franc. ed. 2, 2: 538. 1805.

Hymenostylium recurvirostre (Hedw.) Dix. var. *anoectangioides* (Thér.) Wijk et Marg.

Basionym: *Gymnostomum curvirostre* Brid. var. *anoectangioides* Thér., Bull. Ac. Int. Géogr. Bot. 11: 319. *3 f. 1.* 1903.

Hyocomium armoricum (Brid.) Wijk et Marg.

Basionym: *Hypnum armoricum* Brid., Bryol. Univ. 2: 525. 1827.

Lembophyllum divulsum (Hook. f. et Wils.) Lindb. var. *clandestinum* (Hook. f. et Wils.) Wijk et Marg.

Basionym: *Hypnum clandestinum* Hook. f. et Wils., Nov. Zel. 111. *90 f. 3.* 1854.

Lepidopilum biductulosum (P. Beauv.) Wijk et Marg.

Basionym: *Pilotrichum biductulosum* P. Beauv., Prodr. 82. 1805.

Meteoriopsis pseudostraminea (Par.) Broth. var. *patula* (C. Muell.) Wijk et Marg.

Basionym: *Meteorium stramineum* C. Muell. var. *patulum* C. Muell., Nuov. Giorn. Bot. Ital. n. ser. 4: 136. 1897.

Mielichhoferia mielichhoferi (Hook.) Wijk et Marg.

Basionym: *Weisia mielichhoferi* Hook., Musci Exot. 2: *101.* 1819 (I).

Mielichhoferia mielichhoferi (Hook.) Wijk et Marg. var. *elongata* (Hopp. et Hornsch.) Wijk et Marg.

Basionym: *Weisia elongata* Hopp. et Hornsch. *in* Hook., Musci Exot. 2: *102.* 1819 (I).

Mittenothamnium brevicuspis (P. Vard.) Wijk et Marg.

Basionym: *Microthamnium brachycarpum* Ren. et Card. var. *brevicuspis* P. Vard., Ark. Bot. n. ser. 3: 196. 1955.

Mittenothamnium microthamnioides (Geh.) Wijk et Marg. var. *glauculum* (Card.) Wijk et Marg.

Basionym: *Mittenothamnium brachycarpum* (Ren. et Card.) Card. var. *glauculum* Card. *in* Grand., Hist. Madag. 39: 445. 1915.

[1]) "I" in Taxon 7: 287. 1958, "II" id. 8: 70. 1959, "III" id. 8: 106. 1959, "IV" id. 9: 50. 1960, "V" id. 9: 189. 1960.

Mittenothamnium decurrens (Herz.) Wijk et Marg.

Basionym: *Stereohypnum decurrens* Herz., Beih. Bot. Centralbl. 26(2): 84. 1910.

Mittenothamnium volvatum (Hamp.) Card. var. *gracilius* (Hamp.) Wijk et Marg.

Basionym: *Hypnum volvatum* Hamp. var. *gracilius* Hamp., Ann. Sc. Nat. Bot. ser. 5. 5: 319. 1866.

Mittenothamnium volvatum (Hamp.) Card. var. *volvatulum* (Fleisch.) Wijk et Marg.

Basionym: *Stereohypnum volvatum* (Hamp.) Fleisch. var. *volvatulum* Fleisch., Hedwigia 47: 296. 1908.

Mniobryum wahlenbergii (Web. et Mohr) Jenn. var. *brevifolium* (Medel.) Wijk et Marg.

Basionym: *Pohlia albicans* Lindb. var. *brevifolium* Medel., Ark. Bot. 20A(10): 50. 1926.

Mniobryum wahlenbergii (Web. et Mohr) Jenn. var. *calcareum* (Warnst.) Wijk et Marg.

Basionym: *Webera calcarea* Warnst., Allg. Bot. Zeitschr. 5 (Beih. 1): 30. 1899.

Mniobryum wahlenbergii (Web. et Mohr) Jenn. var. *latifolium* (Schiffn.) Wijk et Marg.

Basionym: *Mniobryum latifolium* Schiffn., Ann. Naturh. Hofmus. Wien 27: 494. 72-75. 1913.

Mniobryum wahlenbergii (Web. et Mohr) Jenn. var. *tasmanicum* (Broth.) Wijk et Marg.

Basionym: *Mniobryum tasmanicum* Broth., Oefv. Finsk. Vet. Soc. Foerh. 35: 48. 1893.

Mnium lycopodioides Schwaegr. ssp. *inclinatum* (Lindb.) Wijk et Marg.

Basionym: *Astrophyllum inclinatum* Lindb., Musci Scand. 14. 1879.

Typonym: *Mnium inclinatum* Lindb., Not. Saellsk. F. Fl. Fenn. Foerh. 9: 48. 1867 *hom. illeg.*

Mnium lycopodioides Schwaegr. var. *nivale* (Pfeff.) Wijk et Marg.

Basionym: *Mnium orthorrhynchum* C. Muell. var. *nivale* Pfeff., Neue Denkschr. Schweiz. Ges. Naturw. 24(5): 61. 1869.

Mnium lycopodioides Schwaegr. ssp. *orthorrhynchum* (Lindb.) Wijk et Marg.

Basionym: *Astrophyllum orthorrhynchum* Lindb., Musci Scand. 14. 1879.

Ochrobryum gardneri (C. Muell.) Lindb. var. *microphyllum* (Besch.) Wijk et Marg.

Basionym: *Ochrobryum gardnerianum* Mitt. var. *microphyllum* Besch., J. de Bot. 11: 142. 1897.

Orthomnium bryoides (Griff.) Wijk et Marg.

Basionym: *Orthotrichum bryoides* Griff., Calcutta J. Nat. Hist. 2: 486. 1842.

Orthostichopsis rusbyana (Par.) Wijk et Marg.

Basionym: *Pilotrichella rusbyana* Par., Ind. Bryol. Suppl. 217. 1900.

Typonym: *Pilotrichella dimorpha* C. Muell., Nuov. Giorn. Bot. Ital. n. ser. 4: 138. 1897 *hom. illeg.* non *P. dimorpha* (C. Muell.) Jaeg., Ber. S. Gall. Naturw. Ges. 1877-78. 508. 1880 (Ad. 2: 772).

Orthotrichum arcticum Schimp. ssp. *mitigatum* (Hag.) Wijk et Marg.

Basionym: *Orthotrichum mitigatum* Hag., Tromsoe Mus. Aarsh. 21-22(1): 36. 1899.

Orthotrichum arcticum Schimp. var. *praemorsum* (Vent.) Wijk et Marg.

Basionym: *Orthotrichum praemorsum* Vent., Bot. Centralbl. 44: 418. 1890.

Papillaria africana (C. Muell.) Jaeg. var. *gracilis* (Ren. et Card.) Wijk et Marg.

Basionym: *Papillaria boivinii* Ren. var. *gracilis* Ren. et Card., Prodr. Fl. Bryol. Madag. 191. 1898.

Palamocladium wilkesianum (Sull.) C. Muell. var. *sciuroides* (C. Muell.) Wijk et Marg.

Basionym: *Meteorium sciuroides* C. Muell., Flora 82: 463. 1896.

Phascum cuspidatum Hedw. var. *henrici* (Ren. et Card.) Wijk et Marg.

Basionym: *Microbryum floerkeanum* (Web. et Mohr) Schimp. var. *henrici* Ren. et Card., Bot. Gaz. 14: 91. 1899.

Pohlia baronii Wijk et Marg. *nom. nov.*

Typonym: *Webera decurrens* Ren. et Card., Rev. de Bot. 9: 396. 1891.

Pohlia cruda (Hedw.) Lindb. var. *oregonensis* (Par.) Wijk et Marg.

Basionym: *Webera cruda* (Hedw.) Schimp. var. *oregonensis* Par., Ind. Bryol. 1349. 1898.

Typonym: *Webera cruda* (Hedw.) Schimp. var. *minor* Ren. et Card., Bot. Gaz. 15: 43. 1890 *hom. illeg.*

Pohlia flexuosa Hook. var. *ardjunensis* (Fleisch.) Wijk et Marg.

Basionym: *Pohlia ardjunensis* Fleisch., Musci Fl. Buitenzorg 2: 516. 1904.

Pohlia subcompactula (Par.) Wijk et Marg.

Basionym: *Webera subcompactula* Par., Ind. Bryol. Suppl. 328. 1900.

Typonym: *Bryum compactulum* C. Muell., Nuov. Giorn. Bot. Ital. n. ser. 5: 167. 1898 *hom. illeg.*

Pohlia minor Schwaegr. ssp. *berninae* (Herz. et Podp.) Wijk et Marg.

Basionym: *Pohlia berninae* Herz. et Podp., Allg. Bot. Zeitschr. 16: 84. 1910.

Porothamnium comorense (C. Muell.) Sim ssp. *corticola* (Kindb.) Wijk et Marg.

Basionym: *Thamnium comorense* (C. Muell.) Kindb. ssp. *corticola* Kindb., Hedwigia 41: 250. 1902.

Porothamnium valdiviae (C. Muell.) Fleisch. var. *pallidum* (Lor.) Wijk et Marg.

Basionym: *Hypnum valdiviae* C. Muell. var. *pallidum* Lor., Bot. Zeit. 24: 188. 1866.

Porotrichodendron glaziovii (Par.) Wijk et Marg.

Basionym: *Porotrichum glaziovii* Par., Ind. Bryol. 1013. 1898.

Typonym: *Porotrichum filiferum* Hamp., Vid. Medd. Naturh. For. Kjoebenh. ser. 3. 6: 156. 1824. *hom. illeg.*

Pseudophemerum nitidum (Hedw.) Reim. var. *minimum* (Rabenh.) Wijk et Marg.

Basionym: *Phascum nitidum* Hedw. var. *minimum* Rabenh., Deutschl. Krypt. Fl. 2(3): 79. 1848.

Typonym: *Phascum strictum* Dicks., Pl. Crypt. Brit. 4: 1. *10 f. 1.* 1801.

Pterygoneurum ovatum (Hedw.) Dix. var. *perraldieri* (Besch.) Wijk et Marg.

Basionym: *Pottia cavifolia* (B.S.G.) Jur. var. *perraldieri* Besch., Cat. Mouss. Algérie 9. 1882.

Rhacocarpus purpurascens (Brid.) Par. var. *argentinicus* (C. Muell.) Wijk et Marg.

Basionym: *Harrisonia humboldtii* (Hook.) Spreng. var. *argentinica* C. Muell., Linnaea 42: 375. 1879.

Rhacocarpus purpurascens (Brid.) Par. var. *rufipilus* (Ren. et Card.) Wijk et Marg.

Basionym: *Harrisonia humboldtii* (Hook.) Spreng. var. *rufipila* Ren. et Card., Bull. Soc. R. Bot. Belg. 32(2): 22. 1893.

Rhynchostegiella tenella (Dicks.) Limpr. var. *rigidula* (Bruch) Wijk et Marg.

Basionym: *Hypnum rigidulum* Bruch *in* Rabenh., Deutschl. Krypt. Fl. 2(3): 286. 1848.

Squamidium turgidulum (C. Muell.) Broth. var. *triste* (C. Muell.) Wijk et Marg.

Basionym: *Neckera turgidula* C. Muell. var. *tristis* C. Muell., Linnaea 42: 418. 1879.

Thuidiopsis furfurosa (Hook. f. et Wils.) Fleisch. var. *fulvastra* (Mitt.) Wijk et Marg.

Basionym: *Leskea fulvastra* Mitt., J. Linn. Soc. Bot. 4: 92. 1859.

Thuidiopsis furfurosa (Hook. f. et Wils.) Fleisch. var. *sparsa* (Hook. f. et Wils.) Wijk et Marg.

Basionym: *Hypnum sparsum* Hook. f. et Wils., Fl. Nov. Zel. 2: 109. *89 f. 5.* 1854.

Timmiella barbuloides (Brid.) Moenk. var. *longiseta* (Brid.) Wijk et Marg.

Basionym: *Trichostomum barbuloides* Brid. var. *longisetum* Brid., Spec. Musc. 1: 233. 1806.

Tortula princeps De Not. var. *parnassica* (Schiffn.) Wijk et Marg.

Tortula muelleri (Bruch) Hook. f. et Wils. var. *parnassica* Schiffn., Verh. Zool. Bot. Ges. Wien 69: 336. 1920.

Tortula ruralis (Hedw.) Crome var. *pontresinae* (Geh. et Warnst.) Wijk et Marg.

Basionym: *Tortula pontresinae* Geh. et Warnst., Beih. Bot. Centralbl. 16: 239. 1904.

Trichostomum brachydontium Bruch var. *angustifolium* (Lindb.) Wijk et Marg.

Basionym: *Mollia littoralis* (Mitt.) Braithw. var. *angustifolia* Lindb. *in* Braithw., Brit. Moss Fl. 1: 245. 1887.

Trichostomum brachydontium Bruch var. *devonicum* (Podp.) Wijk et Marg.

Basionym: *Trichostomum devonicum* Podp., Oesterr. Bot. Zeitschr. 52. 259. 1902.

Ulota luteola (Hook. f. et Wils.) Wijk et Marg.

Basionym: *Orthotrichum luteolum* Hook. f. et Wils., Fl. Antarct. 2: 403. *152 f. 2.* 1847.

Weisia controversa Hedw. var. *minutissima* (Par.) Wijk et Marg.

Basionym: *Hymenostomum minutissimum* Par., Ind. Bryol. Suppl. 189. 1900.

Typonym: *Weisia minutissima* C. Muell., Nuov. Giorn. Bot. Ital. n. ser. 5: 185. 1898 *hom. illeg.*

Wilsoniella decipiens (Mitt.) Wijk et Marg.

Basionym: *Trematodon decipiens* Mitt., J. Linn. Soc. Bot. Suppl. 1: 13. 1859.

Wilsoniella decipiens (Mitt.) Wijk et Marg. var. *acutifolia* (Dix.) Wijk et Marg.

Basionym: *Wilsoniella pellucida* C. Muell. var. *acutifolia* Dix., J. Bot. 50: 67. 1925.

Zygodon subrecurvifolius Broth. var. *viridis* (C. Muell.) Wijk et Marg.

Basionym: *Zygodon ferrugineus* Schimp. var. *viridis* C. Muell., Nuov. Giorn. Bot. Ital. n. ser. 4: 120. 1897.

INTERNATIONAL ASSOCIATION FOR PLANT TAXONOMY

CONSTITUTION *

Name of the Association

Article 1. The association founded at Stockholm, Sweden on July 18, 1950, shall be called: International Association for Plant Taxonomy.

Objects

Article 2.

1. to promote the development of plant taxonomy.
2. to encourage the international relations among plant taxonomists and institutes working on plant taxonomy.

Means

Article 3. The objects of the Association will be reached by the following means:

1. the maintenance of an International Bureau for Plant Taxonomy and Nomenclature.
2. the publication of a periodical dealing with the activities of the society and with objects of general importance for plant taxonomy.
3. the publication of series of books and card indices that are of general importance for plant taxonomists.
4. the establishment and maintenance of committees for specific purposes.
5. the organisation of international symposia on problems of plant taxonomy.
6. the engagement in any other activity consistent with the objects of the Association.

Members

Article 4. The Association shall consist of:

1. Regular personal members. All persons actively engaged or interested in plant taxonomy are eligible to become regular personal members.
2. Associate personal members. Such members may be students or persons having a side-interest in plant taxonomy. They have no right to vote and are not eligible to participate in the functions of the Association.
3. Supporting institute members. All major institutes or other organisations actively engaged or interested in plant taxonomy are eligible to become supporting institute members.
4. Regular institute members. Such members may be institutes or other organisations actively engaged or interested in plant taxonomy.
5. Associate institute members. Such members may be institutes or organisations having a side-interest in plant taxonomy.

Article 5. Membership is acquired by notification in writing to the secretariat and payment of the appropriate fee.

Council

Article 6. The affairs of the Association shall be controlled by a council elected by a majority of the votes cast by the regular and supporting members and consisting of the members of the executive committee (as mentioned below, Art. 9) and not more than ten regular personal members.

Not more than three of the ten ordinary council members shall be residents of the same country.

The votes cast for members as candidates for one of the offices of the executive committee shall count for their election as council members if they are not elected to an office.

Article 7. Members of Council shall hold office between two international botanical congresses and shall be eligible for re-election. Any vacancy occurring during the term of office of a council member shall be filled by the council.

Article 8. The business of the council shall normally be conducted by correspondence, but the council shall endeavour to arrange meetings when suitable opportunities occur, and shall be empowered to conduct business at any such meeting by a majority vote of the council. The council shall have power to appoint committees of members for the furtherance of the objects of the Association.

Article 9. The Association, by a majority of the votes cast by the regular and supporting members, shall elect an executive committee consisting of:

a. a president
b. a vice-president
c. a secretary
d. an administrator of finances
e. a treasurer.

*) As amended 1 September 1960 (see Taxon 9: 258. 1960).

The immediate past president shall be ex officio a member of the executive committee.

The offices of secretary and treasurer may be held by the same person. The duty of the executive committee shall be to exercise a general control of the International Bureau for Plant Taxonomy and Nomenclature and to carry out such other duties as may be delegated to them by the Council.

Article 10. The president, the vice-president, and the administrator of finances hold office between two international botanical congresses and shall not be eligible for re-election in the same office.

Article 11. The secretary and the treasurer shall hold office between two international botanical congresses and shall be eligible for re-election in the same office.

Article 12. The officers of the executive committee shall discharge the duties normally assigned to these respective officers.

Article 13. After the 1954 election, it shall be the duty of the Executive Committee to present for mail balloting by the membership a list of candidates for the offices and councilorships of the Association prior to each International Botanical Congress. The secretary shall circularize the membership to obtain suggested nominees for the guidance of the executive committee. Vacancies in the executive committee shall be filled by the council.

Bureau

Article 14. The Association shall maintain an International Bureau for Plant Taxonomy and Nomenclature. The Bureau is charged with all administrative duties and with the editing of all publications of the Association.

Meetings

Article 15. As a general rule, meetings shall be held at International Botanical Congresses.

Finances

Article 16. The income of the Association shall be derived from subscription of members and from other sources.

Bye-laws

Article 17. The council shall have power to make bye-laws for carrying into operation the terms of the Constitution.

Amendments

Article 18. Amendments to the Constitution may be proposed in writing by any member of the Association. Proposed amendments receiving approval of a majority of the council shall be submitted to the members for a mail ballot. Adoption shall require a favourable vote of two-thirds of the votes cast.

However, amendments rejected by the council may be re-submitted by the mover for discussion at the next meeting of the assembly and if a decision in favour is then obtained, may be voted upon by mail ballot.

Paris, 10 July 1954.

Amended by mail ballot 1 Sept. 1960.

BYE-LAWS

1. The seat of the Association is at the International Bureau for Plant Taxonomy and Nomenclature, Lange Nieuwstraat 106, Utrecht, Netherlands.
2. Membership fees.
   a. Regular personal members: $ 3.— per year.
   b. Associate personal members: $ 1.— per year.
   c. Supporting institute members: $ 50.— per year.
   d. Regular institute members: $ 25.— per year.
   e. Associate institute members: $ 10.— per year.
3. Regular personal members will receive the periodical Taxon published by the Association free of charge. They will receive other publications at reduced prices.
4. Associate personal members will receive Taxon free of charge. In practice only scientists belonging to fields other than Systematic Botany, for example zoologists, geographers, etc. can be kept permanently as associate members since their interest in taxonomy is only accessory. All other associate members are expected to become eventually regular personal members and may not remain in the associate category for more than three years.
5. Institute members receive all publications free of charge unless otherwise decided upon by the executive committee.

NEWS AND NOTES

RUDOLF MANSFELD (1901-1960)

Dr. Rudolf Mansfeld, 59, Curator of the Institut für Kulturpflanzenforschung, Gatersleben, of the German Academy of Sciences at Berlin, died unexpectedly on 30 November 1960, after having just recovered from a serious illness.

Mansfeld was born on 17 January 1901 at Berlin-Weissensee. After having taken his doctor's degree at Berlin in 1924, he worked at first at the Berlin-Dahlem Botanical Museum. During the last 15 years of his life he worked at the Gatersleben institute. Mansfeld served on many international nomenclature committees and was an acknowledged authority on the nomenclature and taxonomy of the Orchidaceae and of the wild and cultivated plants of Europe. His last major publication, which aroused great interest and admiration was his "Vorläufiges Verzeichnis landwirtschaftlich oder gärtnerisch kultivierter Pflanzenarten" in Die Kulturpflanze, Beiheft 2, 1959. We hope to publish an obituary in a coming number of this journal.

THE LINNAEAN HERBARIUM ON MICROFICHES

In the short interval since its publication, the micro-edition of the renowned Linnaean Herbarium has been purchased by almost 50 botanical institutions throughout the world. Produced by the International Documentation Centre AB, Tumba, Sweden, in cooperation with the Linnean Society of London, this photographic reproduction of Linnaeus's monumental work with 13.832 plants is now recorded on about 825 microfiches, which include the Spencer Savage Catalogue. Through the generosity of the Linnean Society, the IDC have been able to keep the price for the micro-edition as low as £ 100.00. (US $ 282) including micro-boxes for filing.

Leading botanists everywhere have expressed their satisfaction with the excellent quality of the reproductions. Dr. Philip A. Munz of the Rancho Santa Ana Botanical Garden in California writes:

"I can only say that I am delighted with them. Having the Savage Catalogue with its numbering system makes them very accessible ... I congratulate you on the success of this enterprise. I do think that the major Herbariums of the world will certainly want this Linnaean Herbarium from you. At any rate, may I say that the kind of work you are doing is of tremendous help to a young institution which cannot always find available some of the older publications."

The same micro-publisher now announces an entirely new service in which it is possible to obtain a microfiche edition of any desired book or work, even if only one copy is wanted. This IDC "record-on-request" service complements the list of works already offered by the IDC, thereby enabling individuals to order any work in micro form at the same unit price of 50 cents (US $ 0.50). A single microfiche can contain between 40 and 80 pages and the price includes catalogue cards. This should be of value to many scientists, especially when they require personal copies of old reference works, otherwise only available at exorbitant prices, if at all.

H. L. de Mink

THE CONSERVATION OF CITRULLUS

The principle of conserving generic names was adopted some fifty years ago, the most important argument being that the resuscitation of "forgotten", "overlooked" or otherwise "obscure" names (which had not been adopted again for at least, say, fifty years) would necessitate many name changes, resulting in the rejection of the corresponding "well-known" and "established" names, whereas conservation of the "established" names would help to avoid the creation of more names or synonyms and hence result in a greater stability in botanical nomenclature. This basic guiding principle is still applied when new proposals for conservation are made and when they are, eventually, officially adopted.

The conservation of *Citrullus* has had to be reconsidered, as in the original version (as still published in the latest 1956 edition or "Paris Code") the genus was conserved against *Anguria* Mill. (1754), *Colocynthis* Ludwig (1757), *Citrullus* Necker (1790), but not against *Colocynthis* Mill. (1754), whereas *Citrullus* Forsk. (1775) was not mentioned at all.

Exell has pointed out that *Colocynthis* Mill. 1754 was older, validly published and well typified and that there was, in his opinion, no reason to conserve *Citrullus* and that the latter should be removed from the list of conserved generic names. More or less in anticipation of this deletion, not only Exell, but several others (indeed, nearly all contemporary authors) have used *Colocynthis* Mill. and their publications are mostly general

floral or monographic works, see, e.g., Andrews, Fl. Anglo-Egypt. Soudan, Keay in the 2nd Ed. of Fl. W. Trop. Afr., Chakravarty's Monogr. Ind. Cucurbit. in Rec. Bot. Survey India 17(1): 112-116 (1959). In my treatment of the South African Cucurbitaceae, now in the press, I have also taken up *Colocynthis* Mill.

When the conservation of *Citrullus* was reconsidered, this case had, to my mind, to be studied as if it were a completely new proposal and, consequently, it was necessary to establish whether the generic name to be rejected (i.e., *Colocynthis* Mill. 1754) was indeed a "forgotten", "overlooked", "dubious", "neglected" or otherwise "obscure" name which, during the last fifty years, had not been or had hardly been used in general taxonomic reference works, floras or monographic treatments. In the case under discussion the rejected name (*Colocynthis* Mill.) is anything but neglected and has *consistently* been used in *all* recent general treatments, floras and monographs, whereas (as far as I can ascertain) the conserved name (*Citrullus* Schrad.) has not appeared in a single important taxonomic publication during the last ten to fifteen years. As I see it, the "change back" to *Citrullus* violates the guiding principle of conservation of generic names (i.e., to improve *stability* in the nomenclature) and would, moreover make the treatments of the genus in the above mentioned recent works obsolete.

I am, therefore, of the opinion that *Citrullus* should be deleted from the list of conserved generic names, as the necessity of conservation is altogether rendered out of date by the facts (Proposal no. (76)).

A. D. J. Meeuse

NOTICES OF BOOKS

Linnaeus - Genera Plantarum ed. 5

Carolus Linnaeus — Genera Plantarum, editio quinta ab auctore reformata et aucta, Stockholm 1754.

Facsimile reprint 1960 by H. R. Engelmann (J. Cramer) and Wheldon and Wesley, Ltd.

Historiae Naturalis Classica tomus III, 1960. With 'Notes on Linnaeus's Genera Plantarum' by William T. Stearn, a reproduction of the first illustration of the Linnean sexual system by G. D. Ehret (1736) and a list of Linnaeus's abbreviated references. The 'Notes' contain a discussion of the typification of Linnean genera, remarks on his sexual system, etc.

R. Brown - Prodromus

Prodromus Florae Novae Hollandiae et Insulae Van Diemen, exhibens characteres plantarum quas annis 1802-1805 per oras utriusque insulae collegit et descripsit Robertus Brown; ... /1810/.

Idem, Supplementum primum, 1830.

Facsimile reprint 1960 by H. R. Engelmann (J. Cramer) and Wheldon and Wesley Ltd. (for U.S.A.: Hafner Publishing Co.).

Historiae Naturalis Classica tomus VI, 1960. With an Introduction (lii pp.) by William T. Stearn, a portrait of R. Brown, and an index of families and genera. The introduction gives ample information on the history of the work, on Flinders Voyage and Brown's collecting places in Australia, his herbarium, abbreviations used by Brown, etc.

Hedwig - Species Muscorum

Joannis Hedwig — Species Muscorum Frondosorum, Leipzig 1801.

Facsimile reprint 1960 by H. R. Engelmann (J. Cramer) and Wheldon and Wesley Ltd. (for U.S.A.: Hafner Publishing Co.).

Historiae Naturalis Classica tomus XVI, 1960.

With an Introduction by P. A. Florschütz, accompanied by 10 illustrations. The introduction contains a biographical sketch of Hedwig (1730-1799), notes on his publications, remarks on the appreciation of Hedwig by his contemporaries, the reasons for the choice of Hedwig's Species Muscorum as the starting-point for the nomenclature of mosses, notes on Schwaegrichen (1775-1853) who edited Hedwig's work posthumously, notes on the typification of Hedwig's Genera, etc.

Flora of Alaska

J. P. Anderson: Flora of Alaska and adjacent parts of Canada. (543 pp., 45 plates with 1074 figs., 1 map). Publ. by the Iowa State University Press, Ames, Iowa, U.S.A., 1959. Price $ 8.50.

This flora integrated and indexed by R. W. Pohl after Dr. Anderson's death in 1953 is a reissue of nine fascicles of a flora of Alaska formerly published by Dr. Anderson.

Flora of Belgium

Flore Générale de Belgique. Spermatophytes. Vol. III — fasc. III, by A. Lawalrée. Bruxelles 1960. (p. 307-440, fig. 21-47, including distribution maps; final part of *Rosaceae* (*Alchemilla* by N. Sougnez & A. Lawalrée), *Mespilaceae* and *Amydalaceae*).

Dendroflora Kavkaza

A flora of the wild and cultivated trees and shrubs of the Caucasus, issued by the Academy of Sciences of the Georgian Sovjet-Republic under editorship of V. Z. Gulisašvili, V. I. Matikašvili, L. B. Machatadze, V. I. Mirzašvili, L. I. Prilipko & M. F. Sachokija. In russian.

I. *Gymnospermae, Chlamydospermae, Angiospermae* (*Monocotyledoneae*). Tiflis 1959 (406 pp., 132 plates, price 15 rubel).

Flora of Paraná

J. Angely: Flora do Paraná. 15. Familias e gêneros Paranaenses; 16. Catálogo das Plantas Paranaenses (species, varieties, forms and hybrids). Both Curitiba, Paraná, 1960 (24 and 83 pp.).

Poisonous plants of North Australia

Poisonous plants of the Northern Territory. 3. *Oxalidaceae to Compositae*. Publ. as Extension Article No. 2, pt. III by the Animal Industry Branch, Northern Territory Administration, 1959. (Final part, 53 pp., with photographs in colour and black and white and with drawings.)

Drawings of British Plants

S. Ross-Craig: Drawings of British Plants XV. *Compositae* (1) London, 23 november 1960. (28 plates, price 9 sh. 6 d.).

Illustrations of the British Flora

Flora of the British Isles by Clapham, Tutin and Warburg. Illustrations, part II: *Rosaceae — Polemoniaceae*. Drawings by Sybil J. Roles. (119 pp., figs. 553-1012, with alphabetical index.) Publ. by the Cambridge University Press, 1960; price 25 s.

Herbaceous plants of Japan

S. Kitamura, G. Murata & M. Hori: Coloured illustrations of herbaceous plants of Japan (Sympetalae), revised edition. A flora for the herbaceous plants of Japan with keys and descriptions in Japanese. Coloured illustrations drawn by H. Isiku. (297 pp., 588 illustrations in 70 plates.) Publ. by Hoikusha, Osaka, 1959; imported by Charles E. Tuttle Co., Rutland, Vt. & Tokyo, Japan. Price $ 8.48.

Trees and shrubs of Japan

S. Kitamura & S. Okamoto: Coloured illustrations of trees and shrubs of Japan. A flora for the woody plants of Japan with keys and descriptions in Japanese. (306 pp., 451 coloured photographs in 68 plates.) Publ. by Hoikusha, Osaka, 1960; imported by Charles E. Tuttle Co., Rutland, Vt. & Tokyo, Japan. Price $ 9.01.

Revision of the genus Aspalathus

R. Dahlgren: Revision of the genus Aspalathus. Part I: The species with flat leaflets. Publ. as Vol. 4 of Opera Botanica (Lund), 1960. (393 pp., 122 figs., 56 maps; a revision of part of the genus with notes on history, nomenclature, morphology, anatomy and ecology apart from an extensive systematic treatment of the species with flat leaflets. Price Skr. 30.—.)

Checklist of North American Lichens

M. E. Hale, Jr. & W. L. Culberson: A second checklist of the lichens of the continental United States and Canada. Publ. as part of Vol. 63 of "The Bryologist" 1960. (36 pp. An unannotated list of 2492 species in 196 genera. Reprints are available from Dr. Lewis E. Anderson, Department of Botany, Duke University, Durham, North Carolina, U.S.A. for $ 1.00.)

Fossilium Catalogus

Fossilium Catalogus. II: Plantae, ed. by W. Jongmans, pars 43. Filicales, Pteridospermae, Cycadales 16 by W. Jongmans † & S. J. Dijkstra. In this part all species of the above mentioned groups are listed from *Heteroneuron* up to *Linguifolium* p. 1357-1452. (Publ. by W. Junk, the Hague, October 1960. Price D.fl. 31.—, subscription price D.fl. 26.—.)

The Species problem and taxonomy

Symposium on the species problem and taxonomy held at the Université de Montréal on April 9th, 1960. Publ. as Vol. 19, 3 (Sept. 1960) of the Revue Canadienne de Biologie, special editor Jean E. Beaudry. This publication giving the papers read at the Symposium deals with all kinds of taxonomic problems and concepts pertaining to Zoology as well as to Botany.

Catalogue and Statistics of Phanerogams

Catálogo e Estatistica dos Gêneros Botânicos Fanerogâmicos. No. 48: *Orchidaceae*, by L. A. Garay & G. F. J. Pabst. Curitiba, Paraná, 1959. (36 pp.)

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SUPERFLUOUS NON-SENSE

R. E. Holttum (Kew)

This is a note in support of Dr. C. X. Furtado's paper in Taxon IX (1960) 147-150, in which he contends that the rule about superfluous names (art. 64-1) is itself superfluous. If every name is typified, as it must be if it is to be unambiguous, then the rule of priority alone is sufficient to decide the cases in which the "superfluous name" rule is invoked; and, as Furtado points out, a number of well-known and long-used names, which under art. 64-1 have been regarded as unusable, could be used. Furtado cites some interesting cases at the foot of p. 147 and in the two following paragraphs; I hope supporters of the rule will ponder these cases.

I am concerned in this matter because I was recently a party to a change of name due to the application of art. 64-1 (Reinwardtia 5: 16. 1959). The change in question seemed to me at the time quite absurd, and I regret that I did not then make a protest. It concerned Ugena semihastata Cav., which was published with the citation of Ophioglossum flexuosum L. as a synonym. In fact, there is no doubt that Cavanilles was describing a new species, clearly characterized by his excellent figure and certainly distinct from the species of Linnaeus. The epithet semihastatum was transferred by Desvaux to Lygodium, and thereafter used for the Philippine species concerned by all authors; the alternative name, Hydroglossum auriculatum Willd. (1810) was never transferred to Lygodium, nor ever in current use, but in 1959, because of art. 64-1, I was considered to be obliged to upset the practice of 150 years, n twithstanding the fact that Cavanilles' name was *not* superfluous when published. This is not science; it is superfluous nonsense. It is the kind of thing which brings taxonomy into disrepute, and which reasonably occasions the clamour for nomina specifica conservanda.

If a new name, published with a description, is accompanied by citation of earlier names as synonyms, it ought to be possible (taking into consideration the description, any illustration, and specimens cited) to decide whether the new name is in fact a synonym of the older one. If this is not possible, either the older or the newer name is not well established, and should be disregarded as a nomen dubium. If all the names concerned are clearly typified, and taxonomic judgement regards them as conspecific, the rule of priority can decide which name is to be used. There are however cases where, owing to the necessity of transferring the earliest epithet to another genus, it becomes unusable; the later epithet, now outlawed by art. 64-1, could then be used. The alternative is to look for the next name given to the species by someone who did not know it to be already named; who in fact knew less about

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the subject than the earlier author. The case of Polystachya luteola (Sw.) Hook., discussed by Summerhayes and Bullock in the article immediately following that of Furtado, provides an example.

When establishing the genus Polystachya, Hooker made the combination Polystachya luteola, based on Cranichis luteola Sw. (1806), and (following Swartz) cited as synonym Epidendrum minutum Aublet (1775). Furthermore, Swartz had also published another name, Dendrobium polystachyon (1800), with citation of Epidendrum minutum as synonym. According to Summerhayes and Bullock, current taxonomic judgement confirms that all these names are synonymous. According to the rule of priority, the correct specific epithet for the species is thus minuta, and the genus which today is considered appropriate is Polystachya. The combination Polystachya minuta (Sw.) was however not made until 1903, and in the meantime this binomial had been used for another species. Another name was therefore necessary. The next epithet in order of priority, polystachyon, gives a tautonym when combined with Polystachya, and is therefore unusable. Thus we come again to Polystachya luteola, and this is rejected under art. 64-1. The next available name, considered to be the correct one by Summerhayes and Bullock, is Polystachya extinctoria Rchb. f. (1863). Reichenbach published this name with citation of Cranichis luteola Sw., with a query (and no comment), as a synonym. Thus we have to pass over Hooker's name, which he gave with the knowledge that an earlier name was available, and use Reichenbach's name, which he gave without that knowledge. This does not seem a very good reason for preferring Reichenbach. The rational solution would seem to be to use Hooker's name, thereby saving a great deal of trouble for all concerned.

So far as I can see, the sole use of art. 64-1 is to avoid the necessity of making a taxonomic judgement in troublesome cases. That such cases exist, I have no doubt; but surely some other method of dealing with them is possible, in place of the wholesale method of the present rule, which outlaws good names with bad and has been responsible for quite needless changes of names.

EVOLUTION OF THE PROPOSALS OF TAXONOMICAL CATEGORIES FOR THE CLASSIFICATION OF CULTIVATED PLANTS

Václav Jirásek (Prague)*

In a short time it will be just a hundred years since the first proposal appeared in the botanical world to designate the plants which originated in cultivation in other ways than those used for the wild ones. This proposal was contained in the letter of the French botanist Alphonse De Candolle (the son) of 1862; it was read at the International Horticultural Congress (further only IHC) of Brussels in 1864 (compare Bull. Congrès Int. Hort. Bruxelles 1864, p. 170. Gand 1864). De Candolle suggested that for the horticultural varieties (sorts) and crosses it should be obligatory to use exclusively the non-Latin, "fancy" names, i.e. so called vernacular or fashionable names derived from a modern language — now also commercial names, pleasing names with a commercially attractive form — so that the names of cultivated plants differ markedly from the Latin scientific names of species and varieties included in systematic botany, thus avoiding mistakes, confusions, and indistinctnesses.

*) Botanical Garden of the Charles University, Benátská 2, Praha 2, ČSSR.

Since that time the question of the suitable designation of plants originating in cultivation has often been discussed at both International Horticultural and International Botanical Congresses. In the draft of the first International Code of Botanical Nomenclature (further only ICBN) elaborated by De Candolle himself (Lois de la nomenclature botanique; so called "Paris rules"), and adopted by the International Botanical Congress (further only IBC) of Paris in 1867, Article 40 deals with the nomenclature of cultivated plants, especially those of garden origin: "Dans les plantes cultivées, les semis, les métis d'origine obscure et les *sports*, reçoivent des noms de fantaisie, en langue vulgaire, aussi différents que possible des noms latins d'espèces ou de variétés. Quand on peut les rattacher à une espèce, à une sous-espèce ou une variété botanique, on l'indique par la succession des noms (Pelargonium zonale *Mistress-Pollock)*". Compare J. Briquet: Texte synoptique des documents destinés à servir de base aux débats du Congrès international de nomenclature botanique de Vienne 1905. Berlin 1905, p. 67. The text of Article 40, unchanged in the main, constitutes Article 30 of both the ICBN adopted by the IBC of Vienna in 1905 (so called "Viennese Code" from 1906), and its 2nd edition after the Third IBC of Brussels in 1910 (so called "Brussels Code" from 1912). Article 30 is formulated as follows: "Forms and half-breeds among cultivated plants should receive fancy names, in common language, as different as possible from the latin names of the species or varieties. When they can be traced back to species, a subspecies or a botanical variety this is indicated by a succession of names. Example: *Pelargonium zonale* Mrs. Pollock". Compare J. Briquet: Règles internationales de la nomenclature botanique adoptées par le Congrès international de botanique de Vienne 1905. Jena 1906, p. 24 (42 and 60) and 2. éd. mise au point d'après les décisions du Congrès international botanique de Bruxelles 1910. Jena 1912, p. 19 (39 and 59). Very similar text, somewhat abbreviated but unchanged in meaning, constitutes the Article 35 of the 3rd edition of the ICBN (so called "Cambridge Code" from 1935). The main principles of the nomenclature of garden plants compiled by the extended Committee for the Nomenclature of Cultivated Plants as a new version of the rules, were not only accepted by the IHC of London (August 1930), but also adopted by the IBC of Cambridge a month later. Into the ICBN they were appended as the Appendix VII, Nomenclature of Garden Plants. Compare J. Briquet and H. Harms: International rules of botanical nomenclature adopted by the International Botanical Congress of Cambridge 1930. Ed. 3. Jena 1935. Article 35 — p. 10 (37 and 65) and Appendix VII — p. 112-113 (114-115 and 116-117). However, special systematic categories for cultivated garden plants had not been proposed at that time.

Such a proposal appeared only in 1938 at the IHC of Berlin at which the term c u l t i g e n (abbrev. c., or cult.) was adopted along with additions to and changes in the provisions for the nomenclature of garden plants. "Die Prinzipien und Regeln der botanischen Nomenklatur sollen auch für die Gartenpflanzen gelten, soweit es sich um Arten und botanische Varietäten handelt. Für die Benennung der in Gärten aus Samen als Spielarten oder Bastarde gezogenen Pflanzen durch Nichtbotaniker wird bestimmt: Der Name einer Gartenvarietät (Sorte) folgt dem Namen der Art, zu der sie gehört; er wird durch ein vorgesetztes c. oder cult. (= cultigen) gekennzeichnet. Beispiel: *Dianthus deltoides* c. Brilliant". Compare 12. Internat. Gartenbaukongress, Berlin 1938. 1, p. 449-460, 1939 (sec. R. Mansfeld: Werden und Wesen der wissenschaftlichen Pflanzenbenennung und ihrer Regelung. Verhandl. des Bot. Vereins der Provinz Brandenburg 82: 67-68, 1942, or R. Mansfeld: Die Technik der wissenschaftlichen Pflanzenbenennung. Berlin 1949, p. 88). According to G. H. M. Lawrence the term cultigen had already been proposed in 1918 by L. H. Bailey to differentiate cultivated plants from wild, indigenous ones. In Gentes Herbarum 1: 113-114, 1923 (compare Lawrence, Baileya 3: 181, 1955b). Bailey defines the cultigen as follows:

"The cultigen is a species, or its equivalent, that has appeared under domestication — the plant is cultigenous". Later on (Manual of cultivated plants most commonly grown in the continental United States and Canada. New York 1949, p. 28) he states that the cultigen is "plant or group known only in cultivation; presumably originating under domestication; contrast with indigen". G. H. M. Lawrence (Taxonomy of Vascular Plants. New York. 2. ed. 1955c, p. 747) uses the term in the same sense.

The term and category cultigen, or rather its abbreviation c. only, is used in Article 35 of the new but unofficial edition of the ICBN from 1947 prepared by the American Society of Plant Taxonomy after the session in St. Louis in 1946, prepared according to the text of the Cambridge edition but incorporating the amendments adopted by the IBC of Amsterdam in 1935. Compare W. H. Camp, H. W. Rickett, and C. A. Weatherby: International Rules of Botanical Nomenclature. Adopted and revised by the International Botanical Congress of Amsterdam 1935. Unofficial special edition, issued as a service to members of the American Society of Plant Taxonomists. Brittonia 6, 1: 1-120, 1947 (therefore so called "Brittonia-Rules"). 2 ed. Waltham U.S.A. 1948. Article 35 (l.c. p. 13) was formulated: "Forms and halfbreeds among cultivated plants receive fancy epithets preferably in common language, as different as possible from the Latin epithets of species or varieties. When they can be attached to a species, a subspecies, or a botanical variety, this is indicated by a succession of names. The fancy epithet will be preceded by the letter "c". Examples: *Pelargonium zonale* c. Mrs. Pollock". In the 1947 and 1948 edition of the Code (p. 112-113), "Nomenclature of Garden Plants" is also appended as Appendix VII in the same wording as that of the 1935 Code.

The use of the category cultigen, abbrev. c., was "officially" valid for only a short time. A discontent with the insufficiency of the Code provoked the drawing up of a new text. W. H. Camp prepared it in substance on the basis of the proposals of specialists from both Europe and America. It was discussed and adopted by the Committee for Nomenclature of Cultivated Plants in 1950 at the IBC of Stockholm ("Stockholm Committee"), and by the International Committee for Horticultural Nomenclature and Registration in 1952 at the IHC of London ("London Committee"). The editorial committee consisting of W. H. Camp, J. S. L. Gilmour, and W. T. Stearn produced the definitive arrangement of the text. In the new Code the category cultigen has been substituted by the term and category c u l t i v a r, abbrev. cv., which at the same time replaces the hitherto commonly used term "cultivated variety", "cultural variety", and all its equivalents in different languages.

According to Lawrence (Baileya 1953 l.c.) as early as 1918 L. H. Bailey proposed the term cultivar for the designation of varieties of plants originated in cultivation, to differentiate them from botanical varieties of wild plants. Later on (compare Gentes Herbarum l.c. sec. Lawrence, Baileya 1955b l.c.) Bailey defined cultivar as follows: "I now propose another" (i.e. in addition to the term cultigen) "name, cultivar, for a botanical variety, or for a race subordinate to species, that has originated under cultivation; it is not necessarily, however, referable to a recognized botanical species. It is essentially the equivalent of the botanical variety except in respect to its origin". In 1949 Bailey (l.c., p. 28) defined cultivar as "a variety or race that has originated and persisted under cultivation, not necessarily referable to a botanical species". See also Lawrence (1955c, l.c.).

By both the Stockholm (1950) and London (1952) Congresses the new category c o n v a r i e t a s, abbrev. conv., was adopted. (First used even in 1949 by I. Grebenščikov: Notulae systematicae. Index Seminum, Gatersleben 1949, p. 42 and 44, for designation of a group of related cultivars.) A proposal for a new International Code for Nomenclature of Cultivated Plants was published in 1952 as the Appendix III of the ICBN. Compare J. Lanjouw: International Code of Botanical Nomenclature

adopted by the Seventh International Botanical Congress Stockholm 1950. Regnum vegetabile, vol. 3, Utrecht 1952 (so called "Stockholm Code") p. 53-63 and 204-214. Appendix III. Proposed International Code of Nomenclature for Cultivated Plants (further only ICNCP), Article C. 5(3) and Note, and Article C. 30(e). After the discussion at the IHC of London the ICNCP was published first in the Journal of the Royal Horticultural Society, London 1952, p. 160-172, and then (1953) also separately (edited by W. T. Stearn). The categories cultivar (cv.) and convarietas (conv.), later often c o n v a r., are up to the present the only internationally adopted categories for the systematic placing of cultivated plants. Compare the ICNCP. London 1953. Article C. 3(III) — cultivar, abbrev. cv., Article C. 4 and Article C. 29(b) — convarietas, abbrev. conv., or the ICNCP. Utrecht 1958, Regnum vegetabile, vol. 10. Article 5 and Note, and Article 10, and Article 14. This recent edition of the ICNCP sets out the regulations for the nomenclature of all cultivated plants (in agriculture, forestry, and horticulture), since it was prepared by the International Commission for the Nomenclature of Cultivated Plants, established at the International Union of Biological Sciences, and represented by specialists of all three branches in approximately equal proportions.

As early as in 1953, however, I. Grebenščikov (Die Entwicklung der Melonensystematik. Die Kulturpflanze 1: 132) and R. Mansfeld (Zur allgemeinen Systematik der Kulturpflanzen. Ibid. p. 155), at the same time, pointed out the insufficiency of only two categories, cultivar and convariety, for the systematic expression of the variability of cultivated plants. The use of the categories usual for the classification of wild plants is not suitable for these cases. Both authors, Grebenščikov (l.c., p. 132-133), but Mansfeld (l.c.) first of all, introduced other new categories for the systematics of cultivated plants. According to Grebenščikov the category convarietas is suitable in the rank between subspecies and varietas, in Mansfeld's conception between subspecioid and provarietas for a group of related provarietates.

But even in 1948 the Soviet specialists in the systematics of cultivated plants, E. N. Sinskaja, S. V. Juzepčuk, and K. I. Pangalo advanced in separate communications (compare Bot. Zurn. 33: 148-155) proposals for a series of new classification categories for cultivated plants. P. M. Zukovskij (Sovremennoje sostojanije problemy proischoždenija kulturnych rastenij. Bot. Zurn. 42: 1597, 1957) suggested that the taxa within a species — subspecies, convarietas (a group of similar varieties), varietas, sortotype (conculta), and sort (cultivar) — were at that time acceptable for cultivated plants. A list of the terms for categories according to their taxonomic rank, both those internationally adopted and those currently proposed, with their abbreviations, authors, and the year of their publication has been compiled by V. Jirásek (Taxonomische Kategorien der Kulturpflanzen. Index Seminum etc. Horti Botanici Universitatis Carolinae Pragensis. Praga 1958, p. 13). He has extended the number of the fundamental categories and of their respective subcategories, and proposed, at the same time, a collective term taxoid (abbrev. taxd., plur. taxoides) for all classification categories of cultivated plants. Cultivar and conculta, as the fundamental categories for cultivated plants, their equivalents and nomenclature of their epithets were also mentioned by V. Jirásek (Cultivar and Conculta — the Fundamental Categories for the Classification of Cultivated Plants. Delectus Seminum etc. Hortus Botanicus Universitatis Carolinae Pragensis. Praga 1959, p. 6-12).

The terms for the categories existing in literature on the systematics of cultivated plants (with the name of the author or originator, the year of publication, the abbreviation of the term, and a brief definition, with notes and synonyms where appropriate are listed in the following glossary. Although it was meant as the first attempt to gather at least the fundamental terms which have been proposed and used from the time of the "Lois De Candolle" till now, the enumeration of the terms of categories

for the systematic classification of cultivated plants, especially those proposed during the last twelve years, is not complete. There are missing, for example, some of the terms of Sinskaja (1948), namely isoreagent, ecoelement, subecotype, cline, climatype, geospecies, ecospecies, and coenospecies, about which the author herself wrote (l.c. p. 149) that they are not taxonomic units "sui generis" but only suitable subsidiary terms, the use of which gives precision and depth to the systematics of both cultivated and wild plants. Similarly there are not registered so called special categories (ICNCP 1953, Article C. 29), namely grex hybrida, abbrev. gh., linea, abbrev. ln., linea hybrida, abbrev. lh., clone, abbrev. cl., and apomixis, abbrev. ap. except however, convarietas, abbrev. conv., because the ICNCP 1958, Article 11, designates them as only kinds of cultivars (varieties). In addition, also, they designate to a greater or less extent characteristics of the origin of a plant. The names of hybrids (ibid., Article 38-45) are governed in substance by the respective Articles of the ICBN 1956. Compare J. Lanjouw: International Code of Botanical Nomenclature adopted by the Eighth International Botanical Congress, Paris, July 1954. Utrecht 1956, Article 40, and Appendix I. Article H 1 to H 5 (so called "Paris Code"). On the other hand the glossary contains some terms of a more common collective sense, and also the terms proposed by R. Mansfeld (1958) for the designation of "chemical" taxons, since the author does not stress their use for wild plants exclusively. The author of the glossary would be grateful for all suggestions which may contribute to its completeness and to giving precision to individual items.

Glossary

a e q u i f o r m a Mansfeld (1958), see isoforma

a e q u i s p e c i e s Mansfeld (1958), see isospecies

a e q u i v a r i e t a s Mansfeld (1958), see isovarietas

a g r o t y p u s Sinskaja (1948), see conculta

"b i o c h e m i c a l f o r m" auct. (comp., for example, Tétényi 1958, p. 40), see "chemical race"

b i o l o g i c a l r a c e Domin (1943), see isoforma, and isovarietas

"c h e m i c a l r a c e" auct. (comp., for example, Tétényi 1958, p. 40) — a collective designation for infraspecific categories distinguished only by physiological-chemical characters

c h e m o c u l t i g r e x Tétényi (1958), abbrev. chg. — a taxoid for designation of a cultivated plant distinguished from a type only by physiological characters, in the rank between chemoconvar and chemocultivar

c h e m o c u l t i v a r Tétényi (1958), abbrev. chv. — a taxoid for designation of a cultivar distinguished from a type only by physiological characters

c h e m o v a r Tétényi (1958), abbrev. chconv. — a taxoid for designation of a "chemical race" distinguished from a type only by physiological characters. Tétényi (l.c. p. 40) proposed for "chemical races" the following ranks of categories: chemoconvar, chemocultigrex, and chemocultivar; for wild plants: chemovar (abbrev. chvar.), and chemoforma (abbrev. chf.). The epithet is formed from the name of a chemical substance distinctive of the particular "chemical race". For example, (comp. l.c. p. 41), in *Cinnamonum camphora* Sieb. subsp. *formosana* Hirota, six chemovarieties can be distinguished: chvar. borneol, chvar. campher, chvar. cineol, chvar. linalool, chvar. saphrol, and chvar. sesquiterpen, from which chvar. linalool can be divided into chf. 86%, and chf. 71%. Tétényi (l.c. p. 41) recognized in cultivated *Cinchona ledgeriana* Moens two chemo-

cultigrexes: chg. chinidin, and chg. cinchonidin. He proposed to designate "chemical races" — polyploids by the respective categories with figures "n" appending to the epithets. For example, a chemoconvar of *Achillea millefolium* L. contains two chemocultigrexes: chg. proazulen 2n, and chg. proazulen 4n. In Taxon 7, 2: 39-44, 1958, there are published the proposals of several authors (comp. also Mansfeld) for the terminology of special categories for plant types distinguished only by physiological characters. A negative attitude towards these proposals is advocated by W. Vent (Taxon 9, 2: 53-54, 1960), and justified in the following way: "Ich schlage vor, für chemisch charakterisierte Sippen keine besondere Bezeichnung einzuführen, sondern diese wie üblich nach den gültigen Regeln der internationalen botanischen Nomenklatur zu behandeln, denn es handelt sich auch bei solchen Sippen in allen Fällen um Pflanzen, die Unterschiede liegen nur in der Anwendung verschiedener Methoden. Nach der eingangs erwähnten Lage erscheint es ratsam, von einer besonderen Bezeichnung chemisch charakterisierter Taxa auch deshalb abzusehen, weil sonst leicht mit der gleichen Berechtigung auch die Forderung erhoben werden könnte, z.B. elektronenoptisch charakterisierte Taxa entsprechend besonders zu bezeichnen, was eine weitere Komplizierung unserer Nomenklatur bedeuten würde". In accordance with the ICNCP 1958, a chemically distinguished type may be treated as a new cultivar as, according to the Article 5 "The term cultivar (variety) denotes an assemblage of cultivated individuals which are distinguished by any characters (morphological, physiological, cytological, chemical, or others) ...." Compare also J. Lanjouw: On the Nomenclature of Chemical Strains. Taxon 7, 2: 43-44, 1958. The justification or redundance of "chemotaxons" and "chemotaxoids" will certainly be discussed in future

conculta Zukovskij (1957), abbrev. conc. — a taxoid for the designation of a group of cultivars (by Pangalo, 1948, also parasort, see this item) related by morphological (physiological, ecological, geographical, or economical) characters, cultivated sometimes together. Syn. agrotypus, convarietas — sec. ICNCP 1953, Article C. 29(b), cultigrex, group (and synonyms), nidus, sortotypus

congregatio Flaksberger (1935) — a category which has been used by the author for the pointing out of fundamental groups of both wild and cultivated species of wheats (*Triticum* L.) conforming in chromosome number (*Diploidea, Tetraploidea, Hexaploidea*)

conspecies auct., abbrev. consp. — a category for the designation of related and crossing species of wild origin (species), or originating in cultivation (specioid), or of both types. For example, *Medicago sativa* L. s.l. (Sinskaja, 1950, p. 28, and 46), or *Cucumis melo* L. s.l. (Grebenščikov, 1953, p. 134)

convarietas Grebenščikov (1949), abbrev. convar. — a taxoid for the designation of a group of related provarietates in the rank between subspecioid, or cultiplex, and provarietas. R. Mansfeld (1953), V. Jirásek (1958), and others used the abbreviated term convar (abbrev. conv.), like cultivar; but the use of the full wording is recommended to accord with varietas, abbrev. var. According to the ICNCP 1953, Article C. 29(b), convarietas, abbrev. conv., is "a group of cultivars within a variable species or interspecific hybrid possessing common features of importance to cultivators". The ICNCP 1958, Article 14, places convarietas among so called "Supplementary Categories" which only have botanical characters and are therefore governed by the ICBN. Syn. cyclus (Sinskaja 1948)

cultigen Bailey (1918, or 1923), abbrev. cult., c., or cg. — a term for collective designation of plants originating and existing only in cultivation, unknown as wild plants. See cultivar

cultigrex auct., abbrev. cgr., see conculta

cultimorpha Semenov (1910), see subspecioid

cultiplex Juzepčuk (1948) em. Jirásek (1958), abbrev. cpl. — a taxoid for the designation of a group of closely related convarietates in the rank between subspecioid and convarietas. According to Juzepčuk's original conception it is a complicated net of forms of very diverse origin (mostly hybrid) and importance; it is a cultigen complex, abbrev. cultiplex; most likely an analogue of species collectiva of wild plants. Syn. ± series

cultitaxon auct., see taxoid

cultivar Bailey (1918, or 1923), abbrev. cv. — the lowest fundamental taxoid for the systematic classification of cultivated plants. According to the ICNCP 1958, Article 5 "The term cultivar (variety) denotes an assemblage of cultivated individuals which are distinguished by any characters (morphological, physiological, cytological, chemical, or others) significant for the purposes of agriculture, forestry, or horticulture, and which, when reproduced (sexually or asexually), retain their distinguishing features". For comparison, some authors' definitions of the term sort, now the equivalent and synonym of cultivar, follow. K. Domin (1945, p. 215): an inheritable form of cultivated plant with insignificant morphological differences, but usually distinguished by biological (physiological) characters, and of some economical importance, containing one or several pure lines. K. I. Pangalo (1948, p. 154): an inheritably constant morphological-biological state (definiteness) originated and maintained by artificial selection and existing within the boundaries of a particular area of cultivation as a collection of sexually or vegetatively reproducing plants. R. Mansfeld (1953, p. 149): a more or less uniform population of plants cultivated for certain purpose, and therefore maintained with characteristics constant within certain limits for a considerable period. The term and category cultivar was adopted by the IBC of Stockholm (1950), and by the IHC of London (1952) as a substitute for the existing category cultigen and the term and category variety, sort, and their other equivalents at the same time. These are, for example, "cultivated variety", "horticultural variety", and "variety" as commonly used in agriculture, forestry and horticulture (comp. the ICNCP 1953, Article C. 3(III), Note), variety in English, "variété" in French, "variedad" in Spanish, "Sorte" in German, "sort" in the Scandinavian languages and in Russian, "ras" or "variëteit" in Dutch, "razza" [and "varietá" — completed by V. J.] in Italian, ["sorta" or "odrůda" in Czech — completed by V. J.], etc. (comp. the ICNCP 1958, Article 10), or "stamm" (comp. Lawrence, Baileya 3: 179, 1955b), or "Hort. form." (ibid. p. 181). The decision about the same validity of both the term cultivar, and its international equivalents was made by the IHC of Scheveningen with validation from 6 September 1955 onwards. Article 10, ICNCP 1958, therefore says: "Anyone is free to use the term cultivar or one of the equivalent terms. When the terms variety, variété and their variants are used in the sense of cultivar, confusion with the term varietas should be avoided by a suitable explanation. Varietas refers to a botanical category intermediate between species and forma". Lawrence (Baileya 3: 181, 1955b and 5: 162, 1957) pointed out the indisputable advantages of the exclusive use of the uniform term and category cultivar in comparison with its equivalents, especially with the ambiguous term varietas. The term cultivar is in fact an abbreviation of "cultivarietas"; this full wording would accord with convarietas, provarietas, varietas, etc. But cultivar has been adopted in this wording which is therefore valid and obligatory. By analogy with cultivar, Mansfeld (1953) and also other authors have introduced the terms convar and provar; but the full wording, convarietas, abbrev. convar.,

provarietas, abbrev. provar. (in accordance with varietas, abbrev. var.) is recommended. Cultivar (and subcultivar) is simply a taxoid of somewhat special characters because its names are mostly vernacular. Syn. cultigen, mixomorpha, sort, variety, and their equivalents, ± subcultigen

cultivated race Domin (1943) — a term for the designation of a biotype of spore plants that has appeared in cultivation

cultivated taxon auct., see taxoid

cyclus Sinskaja (1948), Pangalo (1948) — a taxoid for the designation of a group of closely related types (mostly of hybrid origin), the features of which combine in a "net-like" manner, and whose relationships also are "net-like" (Sinskaja). Mansfeld mentioned such a connection of features, for example, in *Hordeum vulgare* L. s.l. (1950, p. 8-9): "Die morphologischen Varietäten zeigen in ihren Merkmalen netzförmige Verknüpfung, d.h. jede Varietät unterscheidet sich von mehreren anderen nur in einem, aber jeweils in einem anderen Merkmal. Es sind daher viele verschiedene Gruppenbildungen (bzw. Aufteilungen in Arten) möglich; alle diese Gruppen sind jedoch immer auf ein einziges Merkmal gegründet und künstlich. Die Varietäten sind sicher z.T. genetisch nicht einheitlich; dieselbe morphologische Varietät kann durch Kreuzung oder Mutation aus sehr verschiedenen anderen Varietäten entstehen ...." Syn. convarietas. — a taxoid for the designation of a group of closely related nidus, or conculta (Pangalo). Syn. grex (Brežněv, 1958), ± provarietas

divisio Pangalo (1948) — a taxoid for the designation of a group of closely related cycles. Syn. ± convarietas

ecotype, see oecotypus

ergasial Juzepčuk (1948), see specioid

grex auct. soviet pro max. p., abbrev. gr. (better than g., compare below) — usually only a subsidiary unit for the classification of variability within subspecies, for example, for groups of varieties related by morphological characters (Mansfeld 1953: 154). Syn. ± convarietas. Or for a group of closely related sortotypes, i.e. conculta (Brežněv 1958: 91-102). Syn. cyclus (Pangalo 1948), ± provarietas. Flaksberger (1935: 55) observed that grex is not a systematic unit but a collective group, since it contains forms of different ecological-morphological, or geographical units, i.e. proles, subproles, eventually also different subspecies; then a conglomerate of very polymorphous forms. However, the forms belonging to one proles may be joined into varieties. Both Sinskaja (1948), and Pangalo (1948) recommended the exclusion of grex from the system of classification categories for the systematics of cultivated plants because its use for various concepts may result in confusion. According to the ICNCP 1953, Article C. 25(c) and (d), and the ICNCP 1958, Article 40, the term grex, abbrev. gr., should be used for collective names of cultivars of hybrid origin. Grex (1953), grex (1958), or G. (1953), g. (1958) should follow the collective designation. Compare also the ICNCP 1958, Article 42, Note 1, and Article 44. According to the Article 42 "A collective name in a modern language must be distinguished typographically from the generic name to which it is attached, usually by printing the generic name in italics". Lawrence (Baileya 5: 165, 1957) mentioned difficulties and confusions from indistinct typographical distinction of the names applied to grex (or also to cultivar)

group (Gruppe, groupe, gruppa, skupina, etc.) auct. — according to the ICNCP 1958, Article 13 "Within a species or interspecific hybrid which includes many cultivars (varieties), assemblages of similar cultivars (varieties) may be designated as groups". Syn. conculta, convarietas — sec. ICNCP 1953, Article C. 29(b)

isoforma Mansfeld (1958), abbrev. isof. — a category for the designation of a form distinguished from a type only by physiological characters, but conformable with it morphologically. A morphological (taxonomical) form may be divided into several isoforms, distinguished by physiological characters but conformable taxonomically (morphologically). Syn. aequiforma, biological race

isospecies Mansfeld (1958), abbrev. isosp. — a category for the designation of a species distinguished from a type only by physiological characters. The species may be divided into several isospecies, distinguished by physiological characters but conformable taxonomically. Syn. aequispecies

isovarietas Mansfeld (1958), abbrev. isovar. — a category for the designation of a variety distinguished from a type only by physiological characters. The varietas may be divided into several isovarietates, distinguished only by physiological characters but conformable taxonomically. Syn. aequivarietas, biological race. Mansfeld (l.c. p. 43), for example, proposed to divide a morphologically (taxonomically) characterized varietas into a number of isovarieties, distinguished by physiological characters (similarly in species, forms). Then a var. n would be divided into isovar. n, isovar. n_1, isovar. n_2, etc. "wobei n, n_1, ... irgendwelche Namen bedeuten". "Der Weg entspricht dem derzeit in den Regeln für die Behandlung morphologischer Sippen, die weiter aufgliedbar sind, vorgeschriebenen". "Im übrigen müssten die physiologischen Sippen behandelt werden, also mit Namen belegt und beschrieben werden. Eine gewisse Schwierigkeit bildet dabei die Frage der Typisierung, d.h. die Frage der eindeutigen Bindung des Namens an die Sippe. Bei morphologischen Sippen geschieht diese Bindung letzten Endes immer durch die Bezugnahme auf bestimmtes konserviertes Material, was z.B. bei manchen Kryptogamen auch nicht allgemein möglich ist. Bei den physiologischen Sippen müsste wohl dafür die genaue Festlegung bestimmter Testverfahren eintreten".

mixomorpha auct., abbrev. mx. — a category for the designation of forms of chimeras, distinguished by morphological or histological characters. The names of the mixomorphas are vernacular or Latin, and follow after the names of the chimeras like trinomes. Compare the ICNCP 1953, Article C. 32(d). But according to the ICNCP 1958, Article 50, a mixomorphous form of chimera is designated only as a distinct cultivar. Syn. cultivar

nidus Pangalo (1948), see conculta

oecotypus auct., abbrev. oecot. — a term for the designation of a group of biotypes inhabiting a certain biotope, and distinguished within its own grouping by a definite combination of features and qualities. Sinskaja (1948) treats the oecotype as a unit both for the systematics within a species and for the phylogenetical ecology of cultivated plants: but it does not become a constituent of fundamental taxonomical nomenclature (like species and subspecies do). However, the descriptions of all ecotypes forming a species should be added. Flaksberger (1935: 42) considered the term ecotype as only defining a concept, because it may be used equally for a species, variety, or sort, i.e. for different classification categories if they represent a conformable ecological type. Sinskaja (1948) recognized oecotypus localis (the local ecotype), and oecotypus regionalis (the regional ecotype, or geooecotypus, geoecotype). According to the author the only geoecotypes that exist in cultivated plant, are those the forming of which was influenced mostly by geographical isolation. Both kinds of ecotypes are distinguished only by biological and physiological characters; the morphological differences can be hardly discerned. The local ecotypes are named according to the characters of their localities, for example, oecotypus arenarius, oecotypus salignus;

the regional ecotypes are designated geographically, for example, oecotypus borealis, oecotypus jemenensis, etc. Syn. subspecioid

p a r a s o r t Pangalo (1948) — a term for the designation of an inheritably constant morphological-biological state (definiteness) originating naturally, and existing as a collection of generations of the system of cultivated populations, or in a pure state as a collective pattern. Variegated populations without any delimitation are divided into composite forms, parasorts. The parasort is in substance a pure line of single origin

p h y s i o l o g i c a l v a r i e t a s auct. (compare Tétényi 1958, p. 40), see "chemical race"

p r o l e s auct. soviet. pro max. p., abbrev. prol. — a category for the designation of a group of varieties comformable from the ecological-morphological, and often also the geographical, point of view. Soviet botanists use it for the systematic classification of cultivated plants in the rank between subspecies and varietas. Compare Kulturnaja Flora SSSR, 1935-1958. Both Sinskaja (1948) and Pangalo (1948) recommended the exclusion of proles from the system of classification categories in the systematics of cultivated plants, for the same reason as that of grex; similarly also varietas (Sinskaja, 1948; Pangalo, 1948), subvarietas (Sinskaja, 1948), subspecies and forma (Pangalo, 1948). Syn. race, ± convarietas

p r o v a r i e t a s Mansfeld (1953), abbrev. provar. — a taxoid of a systematic value of varietas in wild plants. Mansfeld (1953: 155) introduced the abbreviated term provar; according to him so also did Rothmaler (1955: 201), Dostál (1957: 250), Jirásek (1958: 13), and others. The full wording to accord with varietas, abbrev. var., is recommended

r a c e auct., see proles

s e r i e s auct. soviet pro max. p. — a category for the designation of a group of closely related proles (Flaksberger 1939). Syn. ± cultiplex, ± subspecioid. Usually a category for the designation of a group of related species forming a conspecies (Sinskaja 1948). According to this author it is not a static taxonomic unit characterized by a definite uniformity, but it shows the direction of evolution. Then species, subspecies, ecotypes, and even sortotypes may be joined into series. It may be used in systematics within a species of both cultivated and wild plants. Compare, for example, *Medicago sativa* L. s.l. (Sinskaja 1950, p. 46-48)

s o r t auct., see cultivar

s o r t o t y p e, see sortotypus

s o r t o t y p u s auct. soviet., see conculta

s p e c i e s auct. soviet. pro max. p., abbrev. sp. — a fundamental taxon for the systematic classification of both cultivated and wild plants. Syn. specioid

s p e c i o i d Mansfeld (1953), abbrev. spd. — a taxoid ± of the systematic rank of species in wild plants containing only cultivated forms. According to Mansfeld (Zur allgemeinen Systematik der Kulturpflanzen II. Die Kulturpflanze 2: 141-142, 1954) the specioid may be used: when a cultivated taxon is quite isolated, without any transition to wild forms; when a cultivated plant originated by the union of several wild species; when the differences between a cultivated plant and the original wild one are based on distinct "selective" features, and the transitive forms do not exist, or are not possible at all; in amphidiploids and allopolyploids; in polyploids only in the case where morphological differences from the original forms can be easily recognized. Syn. ergasial

subconculta Jirásek (1958), abbrev. subconc. — a subcategory of conculta

subconvarietas Jirásek (1958), abbrev. subconvar. — a subcategory of convarietas. Jirásek (1958: 13) used the abbreviated term subconvar, abbrev. subconv.; however, the full wording to accord with varietas, abbrev. var., and subvarietas, abbrev. subvar., is recommended

subcultigen Dostál (1956) ex Jirásek, abbrev. scg., see cultivar, and subcultivar

subcultiplex Jirásek (1958), abbrev. subcpl. — a subcategory of cultiplex

subcultivar Dostál (1955) ex Jirásek, abbrev. subcv. — a subcategory of cultivar. Syn. ± subcultigen

subcyclus Pangalo (1948) — a subcategory of cyclus. Syn. ± subprovarietas

subdivisio Pangalo (1948) — a subcategory of divisio. Syn. ± subconvarietas

subgrex auct. soviet. pro max. p., abbrev. subgr. — a subcategory of grex. Syn. subconculta, ± subconvarietas

subprovarietas Jirásek (1958), abbrev. subprovar. — a subcategory of provarietas. Jirásek (1958: 13) used the abbreviated term subprovar, abbrev. subprov.; however, the full wording to accord with varietas, abbrev. var., and subvarietas, abbrev. subvar., is recommended

subspecies Sinskaja (1948), abbrev. subsp., more suitable than ssp. — a regional ecotype (oecotypus regionalis, compare oecotypus) distinguished by striking morphological features. Syn. subspecioid

subspecioid Mansfeld (1953), abbrev. subspd., more suitable than sspd. — a subcategory of specioid; a taxoid of a systematic rank more or less equivalent to subspecies in wild plants; it may be not distinguished by its area of occurrence. According to Mansfeld (1953: 154) it may be used in the case when the original wild type of a cultivated plant is known, and their relationship has been ascertained by the existence of transitional forms; then wild and cultivated populations should be distinguished in a united species (with the name following the rule of priority according to the code of nomenclature) as a subspecies and subspecioid. Syn. cultimorpha, series

taxoid Jirásek (1958), abbrev. taxd., plur. taxoides — a collective designation for individual taxonomic categories for the systematic classification of cultivated plants. Since the term taxon (plur. taxa) is used as a collective designation for individual taxonomic categories both in systematic botany and in systematic zoology, the distinguishing of phytotaxa (abbrev. phytotax., sing. phytotaxon) for phytotaxonomy, and zootaxa (abbrev. zootax., sing. zootaxon) for zootaxonomy in the complex taxa is advisable. The term taxoid may be used analogically for the designation of categories for the systematic classification of all biological types originating and existing only in cultivation and unknown in wild state, i.e. of cultivated plants and domesticated animals (their breeds, races, forms, etc.). Then phytotaxoid (abbrev. phytotaxd., plur. phytotaxoides), and zootaxoid (abbrev. zootaxd., plur. zootaxoides) may be distinguished. In view of the fact that on an international basis only the ICNCP has been elaborated, while in systematic zoology the same rules for nomenclature exist for the names of both free-living and domesticated animals, the use of the term taxoid, abbrev. taxd., plur. taxoides as a collective term for taxa of cultivated plants, will suffice. Syn. cultitaxon, cultivated taxon

References

Brežněv, D. D. (1958): Tomat-*Lycopersicon* Tourn. Kulturnaja Flora SSSR, XX, p. 7-289. Moskva-Leningrad.

Domin, K. (1943): Vývoj a cíle soustavné botaniky. The autoreport. A special separate from the journal Věstník České akademie věd a umění, vol. LII. 1943, č. 2, p. 1-6, Praha.
Domin, K. (1945): Užitkové rostliny I. Rostlinopis X, 1. Praha.
Dostál, J. (1955): O základních otázkách botanické taxonomie a systematiky. MS.
Dostál, J. (1956): Minutes from the meeting of the Taxonomical Commission for the redaction of the Flóra ČSSR. 4 May 1956, p. 1-4. MS.
Dostál, J. (1957): Botanická nomenklatura. NČSAV. Praha (the translation of the ICBN 1956, Utrecht).
Flaksberger, K. A. (1935): Pšenica. Kulturnaja Flora SSSR, I.
Flaksberger, K. A., Antropovy, V. I. and V. F., Bachtějev, F. Ch. and Mordvinkina, A. I. (1939): Opredelitel nastojaščich chlebov. Moskva-Leningrad.
Juzepčuk, S. V. (1948): Tezisy po voprosam o vide u kulturnych rastenij i o principach ich sistematiki. Bot. Žurn. 33: 150-151. Moskva-Leningrad.
Lawrence, G. H. M. (1953): Cultivar, Distinguished from Variety. Baileya 1: 19-20. Ithaca, New York.
Lawrence, G. H. M. (1955a): Notes on the International Horticultural Congress. Baileya 3: 153-155.
Lawrence, G. H. M. (1955b): The Term and Category of Cultivar. Baileya 3: 177-181.
Lawrence, G. H. M. (1957): The Designation of Cultivar-Names. Baileya 5: 162-165.
Mansfeld, R. (1950): Das morphologische System der Saatgerste, *Hordeum vulgare* L. s.l. Der Züchter 20, 1/2: 8-24. Berlin.
Mansfeld, R. (1958): Zur Frage der Behandlung nur physiologisch, aber nicht morphologisch verschiedener Sippen in der botanischen Systematik. Taxon 7, 2: 41-43. Utrecht.
Pangalo, K. I. (1948): Novyje principy vnutrividovoj sistematiki kulturnych rastenij. Bot. Žurn. 33: 151-155.
Prantl, F. (1953): Pravidla a zásady zoologické a paleontologické nomenklatury. NČSAV Praha.
Rothmaler, W. (1955): Allgemeine Taxonomie und Chorologie der Pflanzen. 2. Aufl. Jena.
Semenov-Tian-Shansky, A. [Semenov-Taň-Šanskij, A.] (1910): Die taxonomischen Grenzen der Art und ihre Unterteilungen. Versuch einer genauen Definition der untersten systematischen Kategorien. Zapiski Imperat. Akad. Nauk VIII, Ser. 25, No. 1 (phys.-mat. Ad.), russ. (Deutsch bei Friedländer, Berlin 1910, 49). Sec. Rothmaler 1955, p. 176.
Sinskaja, E. N. (1948): Principy klassifikacii kulturnych rastenij v svjazi s zadačami vnutrividovoj sistematiki. Bot. Žurn. 33: 148-150.
Sinskaja, E. N. (1950): Ljucerna-*Medicago* L. Kulturnaja Flora SSSR, XIII, p. 7-344.
Tétényi, P. (1958): Proposition à propos de la nomenclature de races chimiques. Taxon 7, 2: 40-41.
Vent, W. (1960): Soll man chemisch charakterisierte Taxa besonders bezeichnen? Taxon 9, 2: 53-54.

REFERENCES TO DATES OF ISSUE AND OTHER BIBLIOGRAPHIC DATA ON ENTRIES IN THE MERRILL-WALKER: "BIBLIOGRAPHY OF EASTERN ASIATIC BOTANY" 1938

Egbert H. Walker (Washington D.C.)

While gathering references for the just published Supplement to the Merrill-Walker Bibliography, references were noted which dealt with the exact dates of issue of important works listed in that original volume. A few of these references have been listed in the Supplement and can be located through the index heading on p. 435 "Dates of publication and other bibliographic data". Many other references are given

in the following list. The majority of these are in a superb compilation of bibliographic data prepared by Mrs. M. J. van Steenis-Kruseman and Dr. W. T. Stearn in Flora Malesiana, Series I, vol. 4 (1954). They are brought together here especially for the benefit of users of the eastern Asiatic bibliography, that most extensive regional bibliography ever published and "considered by some as the most important contribution to eastern Asiatic botany ever made". *)

The following list is not to be considered as exhaustive, as no special search for these references has been made. Doubtless there are other works on the subject. The Van Steenis-Kruseman — Stearn work summarizes data from many sources, these noted there but not repeated here. The Flora Malesiana Bulletin frequently cited here is a mimeographed serial irregularly issued, designed primarily to promote the preparation of the Flora Malesiana, which is sponsored by the Netherlands Organization for Pure Scientific Research "Z. W. O." It is edited by Dr. C. G. G. J. van Steenis, Rijksherbarium, Leidèn, Holland.

SERIALS AS LISTED IN THE
REFERENCE LIST OF SERIAL ABBREVIATIONS, pp. xiii-xlii.

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xiv	Ann. Bot. Kon. & Sims	Fl. Males. I. 4: CXCIII. 1954.
xvi	Asiat. Res.	Fl. Males. Bull. 12: 488. 1956.
xvii	Bot. Jahrb. Engler	Fl. Males. I. 4: CLXXIV. 1954.
xvii	Bot. Misc. Hook.	op. cit. CLXXXVIII.
xvii	Bot. Reg.	op. cit. CLXXX.
xxii	Comp. [Curtis's] Bot. Mag.	op. cit. CLXXXIX.
xxvi	Journ. Asiat. Soc. Bengal	op. cit. CXCII.
xxvi	Journ. Bot. Hook.	op. cit. CLXXXIX.
xxvi	Journ. Bot. Kew Misc.	op. cit. CLXXXIX.
xxvi	Journ. Bot. Schrad.	op. cit. CCXII; Fl. Males. Bull. 15: 742. 1960.
xxvii	Journ. Linn. Soc. Bot.	Fl. Males. I. 4: CXCII. 1954.
xxviii	Linnaea	op. cit. CXCVIII.
xxviii	Lond. Journ. Bot.	op. cit. CLXXXIX.
xxix	Mem. Acad. Sci. St. Pétersb.	op. cit. CC.
xxxi	Mem. Wern. Soc.	op. cit. CC.
xxxii	Neu. Journ. Bot. Schrad.	Fl. Males. Bull. 15: 742. 1960.
xxxiii	Paxton's Mag. Bot.	op. cit. 12: 489. 1956.
xxxiv	Proc. Linn. Soc. London	Fl. Males. I. 4: CCVI. 1954.
xxxviii	Trans. Hort. Soc. London	op. cit. CCXIV.
xxxviii	Trans. Linn. Soc.	op. cit. CCXIV; Fl. Males. Bull. 12: 491. 1956.

REFERENCES LISTED IN THE
TITLES AND AUTHORS, pp. 1-549.

Page	*Author and date*	*References to dates of issue*
1	Adanson, M., 1763.	Fl. Males. I. 4: CLXVI. 1954.
3	Aiton, W., 1789.	op. cit. CLXVI.
7	Andrews, H. C., 1805-28.	op. cit. CLXVI.
8	Andrews, H. C., 1797-1812.	op. cit. CLXVI.
27	Baillon, H., 1867-95.	op. cit. CLXVII.
37	Beccari, O., 1877-90.	op. cit. CLXIX.
41	Bentham, G., and Hooker, J. D., 1862-83.	op. cit. CLXX; Journ. Soc. Bibliog. Nat. Hist. 3: 127-132. 1956.

*) See Flora Malesiana Bulletin 15: 721. Aug. 1960.

Page	Author and date	References to dates of issue
41	Bentley, R., and Trimen, H., 1880.	Notes Bot. Gard. Edinburgh 21: 157-162. 1953; Fl. Males. I. 4: CLXX. 1954; Fl. Males. Bull. 11: 432. 1955.
44	Blanco, M., 1837.	Fl. Males. I. 4: CLXXI. 1954.
45	Blume, C. L., 1825-26.	op. cit. CLXXI.
45	Blume, C. L., 1835-48.	op. cit. CLXXI; Fl. Males. Bull. 14: 641. 1959; 15: 731. 1960.
45	Blume, C. L., 1849-56.	Fl. Males. I. 4: CLXXI. 1954; Fl. Males. Bull. 15: 732. 1960.
45	Blume, C. L., 1858a.	Blumea 3: 203-211. 1939; Fl. Males. I. 4: CLXXI. 1954; Fl. Males. Bull. 14: 642. 1959; 15: 733. 1960.
45	Blume, C. L., 1858b.	Fl. Males. Bull. 14: 642. 1959; 15: 732. 1960.
45	Boeckeler, O., 1868-77.	Rhodora 41: 313. 1939; Fl. Males. I. 4: CLXXIII. 1954.
49	Bonpland, A., 1813.	Fl. Males. I. 4: CLXXIV. 1954.
55	Brown, R., 1809, and 1810-19.	op. cit. CLXXIV.
57	Buek, H. W., 1840-74.	op. cit. CLXXV.
57	Bunge, A., 1833.	Journ. Bot. Brit. & For. 79: 63-64. 1941; Fl. Males. I. 4: CLXXIV. 1954.
59	Burman, N. L., 1768.	Fl. Males. Bull. 14: 642. 1959.
61	Cambessedes, J., [and Decaisne, J.]. 1844.	Fl. Males. I. 4: CLXXV. 1954; Fl. Males. Bull. 15: 733. 1960.
63	Candolle, A. P. de, 1818-21.	Journ. Bot. Brit. & For. 79: 25. 1941; Fl. Males. I. 4: CLXXV. 1954.
64	Candolle, A. P. de, Candolle, A. de. and Candolle, C. de, 1824-74.	Candollea 8: 1-4. 1939; Journ. Bot. Brit. & For. 79: 27. 1941; Fl. Males. I. 4: CLXXV. 1954; Fl. Males. Bull. 13: 569. 1957.
66	Carrière, E. A., 1855-67.	Fl. Males. I. 4: CLXXV. 1954.
99	Don, D., 1825.	Journ. Arn. Arb. 26: 168. 1945; Fl. Males. I. 4: CLXXVIII. 1954.
99	Don, G., 1831-38, and 1832.	Fl. Males. I. 4: CLXXVIII. 1954.
102	Duhamel de Monceau, H. L., 1755.	op. cit. CLXXIX.
106	Elwes, H. J., 1877-80.	op. cit. CLXXX.
107	Endlicher, S. L., 1836-50.	Journ. Arn. Arb. 28: 424-429. 1947; Fl. Males. I. 4: CLXXXI. 1954; Fl. Males. Bull. 15: 734. 1960.
108	Engler, A., 1900-37.	Fl. Males. Bull. 15: 734. 1960.
109	Engler, A., and Prantl, K., 1887-99.	Fl. Males. I. 4: CLXXXI. 1954.
128	Franchet, A., and Savatier, L., 1875-79.	Journ. Bot. Brit. & For. 78: 283-284. 1940; Journ. Jap. Bot. 17: 425-426. 1941; Fl. Males. I. 4: CLXXXIII. 1954.
131	Gaertner, J., 1788-1807.	Fl. Males. I. 4: CLXXXIII. 1954; Fl. Males. Bull. 15: 735. 1960.
138	Gmelin, J. F., 1789-96.	Fl. Males. I. 4: CLXXXIV. 1954.
144	Grisebach, A. H. R., 1838.	Fl. Males. Bull. 15: 735. 1960.
161	Hasskarl, J. C., 1844a.	Fl. Males. I. 4: CLXXXV. 1954.
165	Hedwig, J., 1801-42.	Taxon 5: 130-133. 1956.
173	Henrard, J. T., 1926-33, and 1929-33.	Fl. Males. I. 4: CLXXXVI. 1954.
175	Herbert, W., 1821, and 1837.	Journ. Soc. Bibl. Nat. Hist. (London) 2: 375-377. 1952; Fl. Males. I. 4: CLXXXV. 1954.
178	Hill, J., 1759.	Fl. Males. I. 4: CLXXXVI. 1954.
191	Hooker, W. J., 1823-27.	op. cit. CLXXXVII.
193	Hooker, W. J., and Greville, R. K., 1829-31.	Canad. Field Nat. 64: 212-214. 1950.

Page	*Author and date*	*References to dates of issue*
193	Hooker, W. J., and Walker-Arnott, G. A., 1830-41.	Journ. Bot. Brit. & For. 31: 298. 1893; Journ. Jap. Bot. 14: 701-703. 1938 (in Japanese); North American Flora. 28B: 337. 1945; Kew Bull. 1950: 333. 1951; Fl. Males. I. 4: CLXXXIX. 1954; Journ. Soc. Bibl. Nat. Hist. (London) 3: 169. 1957.
216	Jacquin, N. J., 1764-71, 1786-96, and 1781-93.	Fl. Males. I. 4: CXCI. 1954.
220	Jussieu, A. L. de, 1789-91.	op. cit. CXCIII.
249	Kränzlin, F., 1897-1904.	op. cit. CXCIV.
256	Kunth, C. S., 1829-35a.	op. cit. CXCIV.
256	Kunth, C. S., 1833-50.	op. cit. CXCV.
256	Kunze, G., 1840-51.	Journ. Soc. Bibl. Nat. Hist. (London) 1: 139-140. 1938.
260	Lamarck, J. B. A. P. M. de, 1783-1817.	Chron. Bot. 5: 439. 1939; Fl. Males. I. 4: CXCV. 1954; Journ. Soc. Bibl. Nat. Hist. (London) 3: 168. 1957; Fl. Males. Bull. 15: 736. 1960.
260	Lamarck, J. B. A. P. M. de, 1791-1823.	Fl. Males. Bull. 15: 737. 1960.
260	Lambert, A. B., 1803-24.	Madroño 10: 33-47. 1949; Fl. Males. I. 4: CXCVI. 1954.
263 & 264	Ledebour, C. F. von, 1824-34, and 1842-53.	Journ. Arn. Arb. 22: 225-230. 1941; Fl. Males. I. 4: CXCVI. 1954.
264	Ledebour, C. F. von, Meyer, C. A., and Bunge, A., 1829-33.	Fl. Males. I. 4: CXCVI. 1954.
268	Lettsom, J. C., 1772.	op. cit. CXCVII.
272	L'Héritier de Brutelle, C. J., 1785-91, and 1788.	op. cit. CXCVII.
274	Lindley, J., 1821.	op. cit. CXCVII.
275	Lindley, J., 1830-40.	op. cit. CXCVII.
276	Lindley, J., 1852-59.	op. cit. CXCVIII.
277	Link, H. F., 1821-22, and 1827-33.	op. cit. CXCVIII.
277	Link, H. F., and Otto, F., 1820-28, and 1828-[31].	Journ. Soc. Bibl. Nat. Hist. (London) 1: 105-107. 1937; Fl. Males. I. 4: CXCVIII. 1954; Fl. Males. Bull. 15: 738. 1960.
278	Linnaeus, C., 1749-90, and 1767-71.	Fl. Males. I. 4: CXCIX. 1954.
278	Linnaeus, C., 1760.	Fl. Males. Bull. 15: 738. 1960.
300	Martius, K. F. P. von, 1823-50.	Fl. Males. I. 4: CXCIX. 1954; Fl. Males. Bull. 14: 643. 1959; 15: 738. 1960.
312	Maximowicz, C. J., 1866-77, and 1877-93.	Journ. Jap. Bot. 13: 301-302. 1937; Japanese facsimile ed. of 1943, additional introduction.
321	Michaux, A., 1803.	Rhodora 44: 147-150. 1942.
323	Miller, P., 1760.	Fl. Males. I. 4: CCI. 1954.
324	Miquel, F. A. W., 1843-44.	Fl. Males. Bull. 14: 644. 1959.
324	Miquel, F. A. W., 1851-55.	Kew Bull. 1953: 279; Fl. Males. I. 4: CCII. 1954.
324	Miquel, F. A. W., 1863-69.	Fl. Males. Bull. 5: 137. 1949; Fl. Males. I. 4: CCII. 1954; Fl. Males. Bull. 11: 432. 1955.
337	Mouillefert, P., 1891-98.	Fl. Males. I. 4: CCIII. 1954.
352	Nees von Esenbeck, C. G., 1832.	Fl. Males. Bull. 14: 644. 1959.
355	Nicholson, G., 1884-87.	Fl. Males. I. 4: CCIV. 1954.
376	Pallas, P. S., 1771-76.	Journ. Soc. Bibl. Nat. Hist. (London) 3: 172. 1957.
376	Pallas, P. S., 1784-88.	Journ. Arn. Arb. 22: 225-230. 1941; Fl. Males. I. 4: CCV. 1954.

Page	*Serial abbreviation*	*References to dates of issue*
395	Presl, K. B., 1836, and 1851.	Fl. Males. I. 4: CCVI. 1954.
397	Putterlick, A., 1839.	op. cit. CCVII.
399	Rafinesque, C. S., 1836-38b.	op. cit. CCVII.
401	Redouté, P. J., 1802-16, 1817-24, and 1827.	op. cit. CCVIII.
411	Reichenbach, H. G. L., 1827-30.	op. cit. CCIX.
413	Retzius, A. J., 1779-91.	op. cit. CCIX; Fl. Males. Bull. 12: 490. 1956.
413	Richard, A., 1834.	Fl. Males. I. 4: CCIX. 1954; Fl. Males. Bull. 14: 645. 1959.
415	Roemer, J. J., and Schultes, J. A., 1817-30.	Fl. Males. I. 4: CCIX. 1954.
418	Roscoe, W., 1828.	op. cit. CCX.
419	Roxburgh, W., 1814b, and 1820-24.	op. cit. CCX.
419	Royle, J. F., 1839-40.	Journ. Arn. Arb. 24: 484-487. 1943; Fl. Males. I. 4: CCX. 1954.
440	Schrank, F. P. von, 1819.	Journ. Soc. Bibl. Nat. Hist. (London) 1: 151. 1938; Fl. Males. I. 4: CCXII. 1954.
440	Schultes, J. A., and Schultes, J. H., 1822-27.	Fl. Males. I. 4: CCXII. 1954.
443	Seemann, B., 1856-57.	op. cit. CCXII.
451	Siebold, P. F. von, and Zuccarini, J. G., 1826-70.	op. cit. CCXIII.
459	Smith, J. E., 1789-91, and 1790-93.	op. cit. CCXIII.
460	Smith, J. E., 1804-05.	op. cit. CCXIII.
465	Sprengel, K., 1825-28.	op. cit. CCXIII.
472	Steudel, E. G., 1821-24.	op. cit. CCXIII.
472	Steudel, E. G., 1854-55.	op. cit. CCXIV.
510	Vahl, M., 1804-06.	op. cit. CCXV.
514	Ventenat, E. P., 1799a.	op. cit. CCXV.
514	Ventenat, E. P., 1800, and 1803.	Journ. Bot. Brit. & For. 76: 181-183. 1938; Journ. Soc. Bibl. Nat. Hist. (London) 1: 199-201. 1939; Fl. Males. I. 4: CCXVI. 1954.
514	Ventenat, E. P., 1803-04.	Fl. Males. I. 4: CCXVI. 1954.
517	Voss, H., and Siebert, A., 1894-96.	op. cit. CCXVI.
519	Wallich, N., 1828-49.	op. cit. CCXVII.
520	Wallich, N., 1830-32.	op. cit. CCXVI.
526	Weddell, H. A., 1856-57.	op. cit. CCXVII.
528	Willdenow, C. L., 1797-1830.	Rhodora 44: 147-150. 1942; Fl. Males. I. 4: CCXVIII. 1954.
528	Willdenow, C. L., 1806-16, and 1809-13.	op. cit. CCXIX.
530	Willmott, E., 1910-14.	op. cit. CCXIX.
549	Zollinger, H., 1854-55.	Fl. Males. Bull. 11: 433. 1955.

TYPIFICATION AND CORRECT NAMES OF ACACIA VILLOSA WILLD. AND LEUCAENA GLAUCA (L.) BTH.

H. C. D. de Wit (Wageningen)

In Species Plantarum (1753, p. 520) Linnaeus described Mimosa glauca. The protologue is as follows:

POLYANDRIA MONOGYNIA

glauca. 24. MIMOSA inermis, foliis bipinnatis: partialibus sexjugis, leguminibus membranaceis.

Mimosa inermis, foliis duplicato-pinnatis: partialibus utrinque senis pluribusque, siliquis planis membranaceis. *Roy. lugdb. 472.*

Mimosa arborescens, non spinosa, pinnis acaciae latioribus inferne glaucis, flore albo. *Breyn. cent. 1, p. 73.*

Acaciae similis americana non spinosa, floribus globosis albis ramosis. *Kigg. beaum. 3.*

Habitat in America.

There are three references to literature: to A. van Royen, Florae Leydensis Prodromus, 1740, to J. Breyne, Exoticarum al. Plantarum Centuria prima, 1678, and to F. Kiggelaer, Horti beaumontiani catalogus, 1690.

Linnaeus's description of Mimosa glauca appears almost litteratim to be copied from A. van Royen (l.c., p. 472). The specific epithet may have been taken from Breyne's description. Kiggelaer is referred to as a literature reference only.

Linnaeus's description thus is based on a specimen previously described by A. van Royen.

A specimen labelled "Mimosa glauca", being part of A. van Royen's Herbarium, now incorporated in the Rijksherbarium at Leyden (no 908.132-54), has flowers and pods; flowers and pods are explicitly mentioned by van Royen, the describing author.

In the Linnean Herbarium no specimen of Mimosa glauca L., as described in 1753, is preserved under that name.

A. van Royen's specimen has flowers which were correctly placed by Linnaeus in "polyandria monogynia". The leaves are well described; the plant is unarmed, and the pods are indubitably membranaceous.

The sheet carries a label which contains in A. van Royen's handwriting both other references made by Linnaeus: to Breyne and to Kiggelaer. A smaller second label, partly written by A. van Royen, refers to Boerhaave's Index Alter and gives the name Mimosa glauca L. It may be surmised that van Royen labelled his specimen in accordance with Linnaeus's Species Plantarum (of 1753).

I have not discussed so far the word "glauca" in the protologue by Linnaeus. This character is not mentioned in van Royen's description. As Linnaeus used it as the specific epithet, it ought to be traced.

One explanation could be that Linnaeus saw van Royen's specimen when he visited van Royen at Leyden in 1738 and helped van Royen to prepare his Florae Leydensis Prodromus (1740). It is just possible that Linnaeus made a note that the leaflets of van Royen's specimen were glaucous on the lower surface. It may also be that he received during his visit or afterwards, a duplicate specimen sent by van Royen. Stearn refers to an exchange of specimens between Linnaeus and van Royen (Introd. Sp. Pl., in Stearn, Facs. Ed. Sp. Pl. I, 1957, p. 105, 108). If so, this latter specimen may have been passed on to another botanist, as there is no evidence of its existence in the Linnean Herbarium.

More probably, however, Linnaeus took the word "glauca" from the second literature reference, i.e. from Breyne's descriptive phrase.

Breyne's description was referred to by Linnaeus as "Breyne, cent. 1, p. 73". It now appears that in Breynius's Centuria prima of 1678 no text is found which at all resembles Linnaeus's quotation, not on p. 73 nor elsewhere in that book. As Heller warned against supposed errors in Linnean citations of literature (in Stearn, Facs. Ed. Sp. Pl. 2, 1959, Appendix p. 5), I made a careful search but I am compelled to say that I found no trace of the quotation in Breyne's Centuria prima (1678). I was unable to examine Breyne's Prodromi 1 and 2 (1680 and 1689).

In 1739, however, the works of J. Breynius were published by his son J. Ph. Breynius, "Prodromi Fasc. Rar. Pl. Primus et Secundus". On p. 83 of the second prodromus is described:

"Mimosa arborescens Americana non spinosa, pinnis Acaciae latioribus inferne glaucis, flore albo; nobis. Cum floribus et siliquis maturis in Horto Domino Philippi de Flines. Dedit etiam hujus Mimosae siliquam nobis Dominus Kiggelar Nomine Wattepenae".

Obviously, Linnaeus's second literature reference refers to this description and was erroneously cited by some oversight. It is further to be noted that Breyne was apparently well-acquainted with flowers and fruits. Here, I suggest, is the source of Linnaeus's cited characteristic "glauca".

From Breyne's description little can be ascertained regarding the identity of the plant. He appears to have received pods from two specimens but gives no description of these. Most important is Breyne's reference to a vernacular name supplied by Kiggelaer: "wattepena".

It appears that in the W. Indies (Curaçao) the common name "watapana" is well-known. There is a "true" watapana, which refers to Caesalpinia coriaria Willd., and the "false" watapana, which refers to "Acacia villosa Willd." (cf. W. Versluys in Tectona 15, 1922, p. 238). The difference in the appearance of the flowers between Acacia and Caesalpinia makes it certain that Kiggelaer (and Breyne) referred to "Acacia villosa".

I have now demonstrated, that the Linnean description cannot be made to apply to what is now generally named Leucaena glauca (L.) Bth. (number of stamens, pods "membranaceous"), that the description by Linnaeus is actually van Royen's, and that van Royen's type specimen is still extant and matches the description. Linnaeus's Mimosa glauca of 1753 is typified by A. van Royen s.n. (L; no 908.132-54).

In the 2nd edition of Species Plantarum (vol. 2, 1763, p. 1504) Linnaeus redescribed Mimosa glauca. In the description no longer any reference is made to pods. The plant is placed in "polygamia monoecia" and stated to be "decandra". A gland below the lowermost pinnae of the bipinnate leaf is mentioned.

The three literature references to Mimosa glauca L. (1753) are repeated but three other references are added (to Miller's Dict., Trew, and Catesby). Evidently Linnaeus refers now to another taxon than in 1753 and changed the description when he found that the characters, given in previous literature, did not agree. An examination of the new references and the changed description make it clear that the taxon described in 1763 is now generally known as Leucaena glauca (L.) Bth. Later authors are agreed as regards this interpretation of Mimosa glauca L. (1763).

The 3rd edition of Species Plantarum (1764) contains exactly the same text on Mimosa glauca L. (1763). The 4th edition by Willdenow (vol. 4, part 2, 1806, p. 1075) repeats the Linnean data of 1763 and contains a more detailed description. It may be noted in passing that Houttuyn included Mimosa glauca L. (1763) in his work (Nat. Hist. 2, 6, 1776, p. 452-453) but indicated Linnaeus's inaccurate citation of

Breyne's work. Willdenow (l.c.) copied the erroneous literature reference, without noticing Houttuyn's correction.

The genus Leucaena was proposed by Bentham in 1842 (Hook. Lond. Journ. Bot. 4, p. 416). There were 4 species included in it, one of them Leucaena glauca (L.) Bth., based on "Acacia glauca Willd.". Acacia glauca Willd. is based on Mimosa glauca L. (1763), as regards the taxon, whereas Mimosa glauca L., as to the name dates from 1753, and refers to another species.

It is now necessary to establish the correct names for the taxa Mimosa glauca L. (1753) and Mimosa glauca L. (1763).

Willdenow described Mimosa glauca L. (1753) in 1806 (Sp. Pl. Ed. 4, vol. 4, 2, p. 1067) as Acacia villosa. He made no reference to earlier data in the previous editions of Species Plantarum by Linnaeus and took no notice of the earlier description in 1753, due to the misconception of Mimosa glauca (1753) caused by the changed data in 1763. Willdenow's combination was based on Mimosa villosa Swartz (Fl. Ind. occ. 2, 1800, p. 982). Acacia villosa (Sw.) Willd. is a later synonym of Mimosa glauca L. (1753), and to be named Acacia glauca.

The name Acacia glauca was used by Moench (Meth. Pl. 1794, p. 466), who, in all probability, intended to refer to Mimosa glauca L. (1763), as regards the taxon. It seems best, and in accordance with Art. 55 of the Code (1956), to adopt Acacia glauca (L.) Moench, as the correct name (basionym Mimosa glauca L. (1753)) for what became known as Mimosa villosa Swartz and Acacia villosa (Sw.) Willd. (see also Fawcett and Rendle, Fl. Jamaica 4, 2, 1920, p. 141).

When tracing the correct name for what became known as Leucaena glauca (Willd.) Bth. the following is to be considered. A specimen in the Linnean Herbarium is accompanied by Linnaeus's handwriting on the sheet "21. latisiliqua". This is crossed out and in Sir James E. Smith's handwriting is added "glauca". The specimen belongs, undoubtedly, to what became generally known as Leucaena glauca (Willd.) Bth., a fact already recorded by Bentham himself (Trans. Linn. Soc. London 30, 1875, p. 534-535), as a note to Lysiloma latisiliqua (L.) Bth.

"Plumier's figure and description, upon which Linnaeus established the species (Lysiloma (Mimosa) latisiliqua), leave no doubt as to the identity of his plant with the one above described. The specimen, however, in the Linnean herbarium from the Uppsala garden, named Mimosa latisiliqua, is evidently the common Leucaena glauca."

This statement is entirely correct. In Species Plantarum (1753) Linnaeus described on p. 519:

> 21. MIMOSA inermis, foliis bipinnatis: partialibus quinquejugis: propriis decemjugis. *latisiliqua.*
>
> Acacia non spinosa, siliquis latis compressis, flore albo. Plum. spec. 17.
> Habitat in America calidiore.
> Bracteae dimidiato-cordatae. Pedunculi terni; Flores capitati.

It might be supposed that the specimen in the Linnean herbarium named by Linnaeus "21. latisiliqua" (cf. Savage, Cat. Linn. Herb. 1945, p. 183) ought to be accepted as the holotype of Mimosa latisiliqua. This view is strengthened by the fact that Linnaeus noted the specimen as "21." which is its number in Species Plantarum (1753), while in the second and third edition M. latisiliqua was entered under 24. Moreover, Linnaeus cited in the protologue of Mimosa latisiliqua Plumier's Catalogus plantarum americanarum etc. (1703), and this analysis is all Plumier's

published work contained before 1753, because Plumier's "Description des plantes de l'Amérique" of 1693 has no reference to Mimosa or Acacia. Linnaeus, obviously, must have had some additional source for the descriptive data he added to Plumier's analysis, in the protologue of 1753. It would seem possible that the specimen "21. latisiliqua" provided these. Nevertheless, the characters of the Linnean specimen only partly agree to Linnaeus's description.

The position becomes clear if the description of 1753 is compared with tab. 6 of Burman's edition of Plumier's manuscripts. The Linnean descriptive data of 1753 are so strikingly conform to tab. 6 that there cannot be any doubt that Linnaeus used that figure for a model. Burman's edition appeared in 1755 (Plantarum americanarum fasc. primus etc.) but this is not an obstacle to accepting this explanation, because he had at his disposal the so-called Codex Boerhaavianus (see Urban, Fedde Rep. Sp. Nov. Beih. 5, 1920, p. 31) in 1738, when staying at Leyden and at Amsterdam.

For completeness's sake I mention that Linnaeus added the reference "tab. 6" to the (changed but not improved) description in the 2nd and 3rd edition of Species Plantarum but this is of no account as regards the fact that the type of Lysiloma latisiliqua (L.) Bth. is entirely based on Plumier's description in the "Catalogus" (1703) and, in 1753 unpublished, plate. There can be no doubt as regards the typification of Plumier's taxon, in other words of Lysiloma latisiliqua (L.) Bth.

The Linnean publications and herbarium thus provide no means of typifying the taxon known as Leucaena glauca (L. ex Willd.) Bth.

The first nomenclatorially legitimate name I have been able to trace is Mimosa leucocephala Lamarck (Encycl. Méth. Bot. 1, Dec. 1783, p. 12). As the name Leucaena glauca (Willd.) Bth., being based on Mimosa glauca L. cannot be maintained, it ought to be replaced by Leucaena leucocephala (Lam.) de Wit comb. nov., basionym Mimosa leucocephala Lamarck (l.c.). Dr. Leeuwenberg verified in the Paris Herbarium that the Lamarckian holotype is, actually, what became so widely known as Leucaena glauca (Willd.) Bth. It is interesting to note that Lamarck added to his label "Mimosa leucocephala Enc." on one of the sheets, a second label "Mimosa latisiliqua".

Due to Linnaeus's misidentification of van Royen's Mimosa glauca in 1763 and the subsequent adoption by Willdenow, Bentham and others of his view in 1763 instead of the initial concept of Mimosa glauca as published in 1753, the error was maintained. These unfortunate circumstances may also explain why Leucaena glauca (Willd.) Bth., though cultivated in various botanical gardens (Uppsala; Jardin du Roi) only received a legitimate name in 1783. It seems useful to add a description to the now corrected names.

Acacia glauca (L.) Moench, Meth. Pl. 1794, quoad nomen, basionym Mimosa glauca L. Sp. Pl. 1753, p. 520.

Mimosa villosa Swartz, Fl. Ind. occ. 2, 1800, p. 982;

Acacia villosa (Sw.) Willd. Sp. Pl. Ed. 4, vol. 4, 2, 1806, p. 1067.

An unarmed shrub or small tree. Leaves bipinnate, pinnae in (4)5-6(10) pairs, common rachis 8-12 cm long, glandless. Pinnae 4-7 cm long; leaflets 10-16(30) pairs, oblong-lanceolate, unequal-sided, top blunt, tip acute, base rounded, hairy to glabrescent, 1-2 mm wide, 4-8 mm long. Stipules lanceolate, early deciduous.

Inflorescence a short, sometimes subcapitate 20-40-flowered spike, 2-6 together in the upper axils, the uppermost arranged in racemes. Peduncle up to 2½ cm long. Flowers on 1-2 mm long pedicels. Calyx very small, almost 1 mm long, corolla 2-2½

mm long. Stamens numerous, at first white, later yellowish. Pods flat, valves membranaceous, glossy, margins raised, 3½-9 cm long, ½-2 cm wide; 1-8 seeded. Seeds on a long, slender funicle.

Type: Herb. A. van Royen (L, herb. no 908.132-54).

Distr.: Central America; sometimes cultivated in the tropics.

Leucaena leucocephala (Lam.) de Wit comb. nov. — basionym Mimosa leucocephala Lamarck, Encycl. Méth. Bot. 1, Dec. 1783, p. 12.

Acacia glauca (L.) Willd. Sp. Pl. Ed. 4, vol. 4, 2, 1806, p. 1075; basionym Mimosa glauca L. Sp. Pl. Ed. 1, vol. 1, 1753, p. 520, quoad nomen.

Leucaena glauca (Willd.) Bth., basionym Mimosa glauca L. Sp. Pl. Ed. 2, vol. 2, 1763, p. 1504.

An unarmed shrub or small tree. Leaves bipinnate, pinnae in 4-9 pairs, common rachis 15-20 cm long, often with an orbicular gland below the lowermost pair of pinnae. Pinnae up to 10 cm long; leaflets 11-17 pairs, oblong-lanceolate, slightly unequal-sided, top acute, glabrous (except the margin), 2-3½ mm wide, 7-12 mm long. Stipules small, early deciduous.

Inflorescence capitate, one or more together, peduncle up to 5 cm long. Involucre appressed, hairy, deciduous. Calyx 2½ mm long, petals nearly twice as long. Stamens 10, nearly 1 cm long, anthers pilose. Ovary with some long hairs on upper half. Style ± equalling the stamens. Pods strap-shaped, up to 20 cm long and 2 cm wide, somewhat tapering to the base, 18-25-seeded.

Type: Lamarckian Herb. (P), s.n., "Mimosa latisiliqua", "Mimosa leucocephala, enc.".

Distr.: Probably Central America or South America, now pantropically cultivated.

Finally I wish to acknowledge the useful assistance and suggestions received from Mr. Ir. F. J. Breteler, Dr. A. J. M. Leeuwenberg and Dr. F. A. Stafleu.

OBSERVATIONS ON GASTEROMYCETES IX

THE CONSERVATION OF *NIDULARIA* Fr. AND THE SEPARATION OF *MYCOCALIA* J. T. Palmer, gen. nov.

J. T. Palmer (Liverpool)*

INTRODUCTION.

The name *Nidularia* Fr. (1817) has been used by most students of the Gasteromycetes although it is illegitimate and a later homonym of *Nidularia* Bull. ex J. St.-Hil. (1805) which, in turn, is a synonym of *Cyathus* Hall. ex Pers. The only other name known to have been used for this genus is *Granularia* Roth ex Nees (1820) but this is a later homonym of *Granularia* Sow. (1815), hence it would appear that the genus is without a legitimate name.

As I am preparing a revision of this genus, I consider it advisable to propose the conservation of *Nidularia* Fr. (1817) on the grounds of long established usage. The two alternatives, (a) the conservation of *Granularia* Roth ex Nees (1820) and (b) the publication of a new name for the genus, are undesirable because the former would bring into current use a little used name and the latter would result in new

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combinations of existing epithets. In addition, as the word '*Nidularia*' is the root of the Family and the Order, it would be a pity if this generic name disappeared from the list of current genera. However, Dr. M. A. Donk points out to me that the Family *Nidulariaceae* Corda (1842) has the basionym *Nidularioideae* Fr. (1823) ["*Subord. III. Nidulariaceae*"] with *Nidularia* Bull. (non Fr.) as the type genus.

The opportunity is also taken to separate *Nidularia* Fr. Section *Sorosia* Tul. as a distinct genus, *Mycocalia*, with 6 new combinations.

NIDULARIA Fr. (1817) nom. cons. prop. (77).

Whilst many species have been ascribed to this genus, with a number now being placed under other genera of the Family *Nidulariaceae*, I consider that, apart from the Section *Sorosia* Tul. (1844), there are only two good species, *Nidularia farcta* (Roth ex Pers.) Fr. and *N. pulvinata* (Schwein.) Fr. The Section *Sorosia* Tul. comprises 7 species: *Nidularia arundinacea* Vel., *N. denudata* Fr., *N. duriaeana* Tul., *N. fusispora* Mass., *N. minutissima* J. T. Palmer, *N. reticulata* Petch and a species awaiting description, which I regard worthy of separation as a distinct genus on peridial characters. These species are mainly minute fungi and have no doubt been overlooked in the past on account of their small size and unusual habitats.

Dr. Donk points out to me that the name *Nidularia* first appeared in print (Bulliard 1790) combined with two specific epithets, i.e. *Nidularia vernicosa* and *N. laevis*. It was not validly published because (i) it predated the starting point for the Gasteromycetes (Persoon 1801) and (ii) there was no accompanying generic description. The latter was later supplied by Bulliard (1791) when a third species, *Nidularia striata*, was added. *Nidularia striata* and *N. vernicosa* are now placed in *Cyathus* Hall. ex Pers. and *N. laevis* in *Crucibulum* Tul.

Nidularia Bull. was validated in a little-known publication by J. de St.-Hilaire (1805), who gave a generic description, a reference to "Bull. Vent." and short accounts of two species, *Nidularia vernicosa* and *N. laevis* ("*levis*"). *Nidularia vernicosa* is, therefore, chosen as the type species of both Bulliard's earlier and the validated names. The validation of *Nidularia* by St.-Hilaire is, however, almost completely unknown and, therefore, those considering this matter have usually ascribed it to Link (1809), who similarly used it instead of *Cyathus* Hall. ex Pers., which is mentioned in parentheses. When Persoon's *Synopsis methodica fungorum* was nominated as the starting point for the nomenclature of the Gasteromycetes, *Nidularia* Bull. ex St.-Hil. became a synonym of *Cyathus* Hall. ex Pers. Persoon (1801) placed *Nidularia vernicosa* Bull. amongst the synonyms of *Cyathus olla* (Batsch) ex Pers.

During the so-called classical period of mycology, there was considerable inconstancy of nomenclature with authors whimsically publishing new names or deciding to adopt a name different from that used in a preceding work. Some authors preferred *Nidularia* to *Cyathus* with perhaps the most noteworthy examples being Persoon (1819), when he published *Nidularia plumbea* as a new name, citing his earlier *Cyathus olla* as a synonym, and Fries (1823), when he rejected his own name, *Nidularia* Fr. (1817), in favour of *Nidularia* Bull. (1790).

The most important publications dealing with the genus after Persoon (1801) and Fries (1823) are those of the Tulasnes (1844), Winter (1884), De Toni (1888), Massee (1889), White (1902), Hollós (1904), Lloyd (1906), Th. C. E. Fries (1921), Rea (1922), Coker & Couch (1928), Killermann (1931), Cunningham (1944), Benzoni (1948), Eckblad (1955), Moser (1955) and Cejp (1958). With the exception of White (1902), all these authors have consistently used *Nidularia* in the original sense of Fries (1817).

GRANULARIA Roth ex Nees (1820).

Granularia Roth (1797) was validated by Nees v. Esenbeck (1820) without citing any species and who remarked "Genus a Rothio constitutum, mihi ignotum. An primordia vegetationis alienae?". O. Kuntze (1891) confined himself to only an historical account of the generic names and recombinations with *Granularia* of all the species then known to him. White (1902) followed him by substituting *Granularia* for *Nidularia* Fr. (1817). All three authors were, of course, unaware that Persoon (1801) would be adopted as the starting point for these fungi.

It has, however, been overlooked that *Granularia* Sow. (1815), based on *Granularia violae* Sow. (descriptio generico-specifica) and now regarded as a synonym of *Urocystis violae* (Sow.) Fisch., is a validly published earlier homonym of *Granularia* Roth ex Nees. Dr. Donk informs me that there also exists a later homonym, *Granularia* Sacc., Fungi Imperfecti.

MYCOCALIA J. T. Palmer, **gen. nov.**

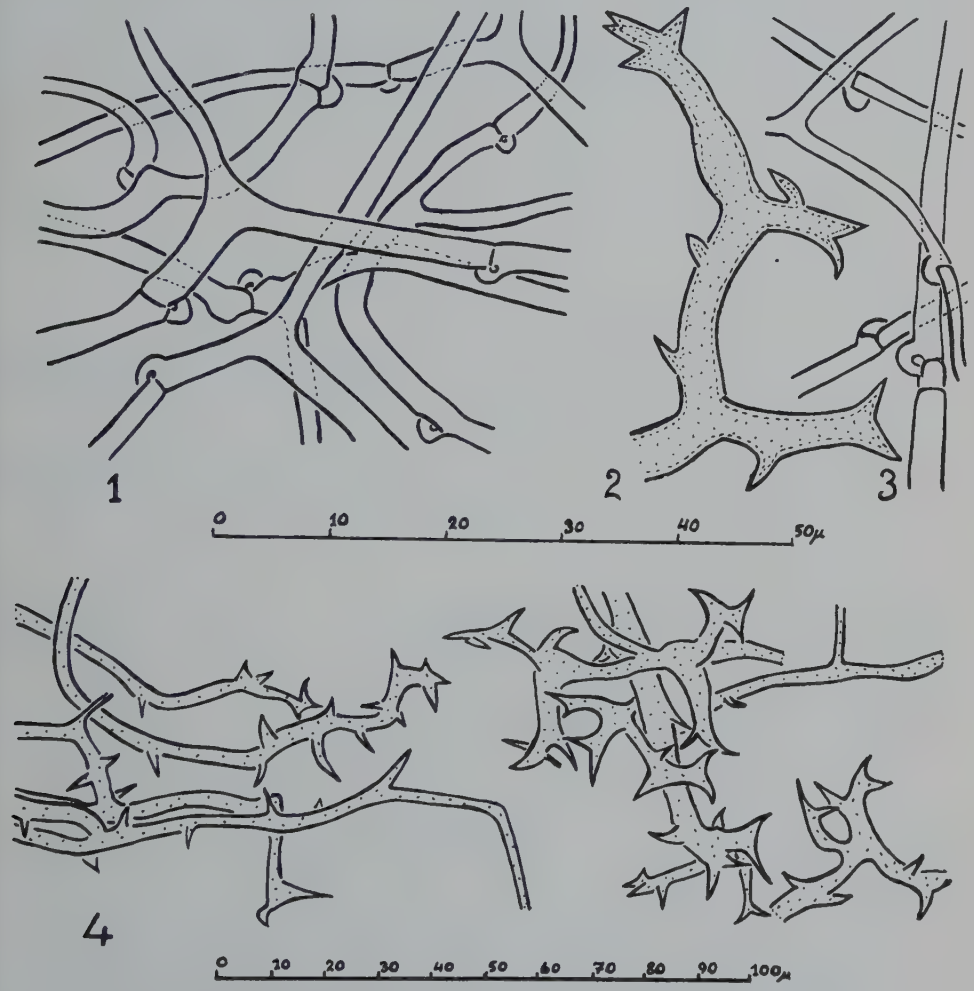
In the summary of my paper which appeared in the *Programme et Résumés des Communications* of the *Première Session Européenne de Mycologie, Belgique, 15-22 septembre 1956*, I used the name *Mycocalia* for the section *Sorosia* Tul. (1844), recombining *Nidularia denudata*, *N. castanea*, *N. fusispora* and *N. reticulata*, together with my new and then unpublished species *minutissima*. I was then intending to separate the section *Sorosia* from *Nidularia* Fr. (1817) as a distinct genus on the grounds of the peridium being formed of hyaline, branched, septate hyphae with clamp connections (Fig. 1) whereas the remaining species of *Nidularia* Fr. (1817) have a peridium of tinted, rigid, spinose, aseptate hyphae (Fig. 2) which continue into long, simple threads (Fig. 4). As a result, the peridium of members of the section *Sorosia* appears as a thin, usually white, ephemeral structure which often entirely disappears whilst *Nidularia farcta* and *N. pulvinata* have a more robustly constructed peridium, at first tufted to furfuraceous and varying from cream to cinnamon, later weathering to smooth with the colour leaching to off-white, and of a semi-persistent nature.

Shortly before the start of the Congress, I detected hyaline hyphae similar to those of the section *Sorosia* amongst typical tinted, spinose hyphae in a preparation of the peridium from a specimen of *Nidularia farcta* and thereupon decided it would be more prudent to delay the separation of the section *Sorosia* from *Nidularia* until the matter had been further investigated. It was then too late to withdraw the summary but the position was briefly explained prior to reading the paper in Brussels during which, and in its subsequent publication (Palmer 1958), no mention of *Mycocalia* was made and the name *Nidularia* was used throughout.

Subsequently, after I had re-examined my collections and had studied further material, I decided that the hyaline hyphae seen in the preparation of *N. farcta* were probably generative hyphae from the gelatinous matrix in which the peridioles develop, fragments of which are often found adhering to the interiors of the peridial walls (Fig. 3). I therefore consider my earlier opinion to be justified and that the new genus *Mycocalia* should be formally published without any further delay.

It is tempting to consider these hyphae analogous to the hyphal systems of the Polyporaceae as originally defined by Corner (1932a, b), i.e. *Monomitic* — generative hyphae only; *Dimitic* — skeletal and generative hyphae; *Trimitic* — skeletal, binding and generative hyphae. Cunningham (1947) described two general hyphal types, "bovista", with a main stem and tapering, lateral branches, and "long", formed of slender hyphae, for both skeletal and binding hyphae. In such a system,

Mycocalia, with its peridium constructed of hyaline, branched, septate hyphae with clamp connections (Fig. 1), would be considered *Monomitic* and *Nidularia* Fr. (1817) with its tinted, rigid, spinose Hyphae (Figs. 2 & 4), tapering into long, simple threads (Fig. 4), together with the hyaline, branched, septate hyphae with clamp connections from the gelatinous matrix as *Dimitic*. The spinose hyphae undoubtedly perform a skeletal role and produce the more robust and semi-persistent peridium of *N. farcta* and *N. pulvinata*.



1. *Mycocalia denudata:* Generative hyphae from the peridium. (Herb. Myc. Lpol. No. 1408. Ditton, Lancashire, England).

2.—4. *Nidularia farcta:* Hyphae from peridium. (Herb. Myc. Lpol. No. 1407. Ditton Junction, Lancashire, England).
   2. Fragment of skeletal hyphae from peridial wall.
   3. Generative hyphae from interior of peridial wall (adhering gelatinous matrix).
   4. Skeletal hyphae from peridial wall showing rigid spinous structures tapering into long threads.

All figures have been drawn by means of a camera lucida from fresh material mounted in 10% Erythrosin Ammonia (Palmer 1955).

The appearance of the name *Mycocalia* in the Congress *Résumés des Communications* does not in my view constitute effective publication because of the reasons given below although some workers may consider it as having been effectively published but a *nomen nudum*. Cejp (1958) referred to *Mycocalia* in a foot-note based on information which I gave him in a personal communication. There may be a divergence of opinion as to whether or not the Congress *Résumés des Communications*, which was for private circulation only and was handed to each participant on arrival (with 3 papers for which there were summaries, and others for which there were only titles, not being read at the Congress meetings because their authors failed to attend), can be considered tantamount to "effective publication". The present communication can, therefore, be considered as validating *Mycocalia*.

MYCOCALIA J. T. Palmer, **gen. nov.**

Nidularia Fr. p.p., Symb. gast. *I*, 2. (1817).

Nidularia Fr. section *Sorosia* (*Clausae*) Tul., Ann. sci. nat. sér. 3, *I*, Bot., 98-100. (1844).

Granularia Roth ex Nees p.p., Hor. phys. Berol. collect., 6. (1820).

Sporocarpa gregaria ad solitaria, multi- ad uniperidiolaria. *Peridium* tenuissimum, evanescens; hyphis hyalinis, ramosis, septis, fibuligeris. *Peridiola* libera, lenticularia. *Spora* hyalina. *Basidia mutata* saepe.

Fructifications gregarious to solitary, multi- to uniperidiolar. *Peridium* thin, evanescent; with hyaline, branched and septate hyphae bearing clamp-connections. *Peridioles* free, lenticular. *Spores* hyaline. *Metamorphosed basidia* often present.

Etymology: Greek *μύκης* = Fungus and *καλιά* = Bird's nest.

Gender: Feminine (Jones 1940).

Type species: Mycocalia denudata (Fr.) J. T. Palmer.

Enumeration of species:

1. *Mycocalia denudata* (Fr.) J. T. Palmer, **comb. nov.**
   Nidularia denudata Fr., Symb. gast. *1*, 2. (1817).
   Cyathus denudatus (Fr.) Sprengel, Linné Syst. veg. ed. xvi, *4*, 415. (1827).
   Granularia denudata (Fr.) O. Kuntze, Revis. gen. plant. *2*, 855. (1891).
2. *Mycocalia arundinacea* (Vel.) J. T. Palmer, **comb. nov.**
   Nidularia arundinacea Vel., Nov. myc., 169-170. (1939).
3. *Mycocalia duriaeana* (Tul.) J. T. Palmer, **comb. nov.**
   Nidularia duriaeana Tul., Ann. sci. nat. sér. 3, *I*, Bot., 99-100. (1844).
   Granularia duriaeana (Tul.) O. Kuntze, Revis. gen. plant. *2*, 855. (1891).
   Granularia castanea (Ellis & Everhart in herb.) ex White, Bull. Torrey bot. Club, *29*, 276-277.
   Nidularia castanea (White) P. A. & D. Saccardo *in* P. A. Saccardo, Sylloge fungorum *17*, 216. (1905).
4. *Mycocalia fusispora* (Massee) J. T. Palmer, **comb. nov.**
   Nidularia fusispora Massee, Kew Bull. *1898*, 125.
5. *Mycocalia minutissima* (J. T. Palmer) J. T. Palmer, **comb. nov.**
   Nidularia minutissima J. T. Palmer, Naturalist (Lond.), 4. (1957).
6. *Mycocalia reticulata* (Petch) J. T. Palmer, **comb. nov.**
   Nidularia reticulata Petch, Ann. Roy. bot. Gdns. Peradeniya, *7*, 60. (1919).

CONCLUSIONS.

It can be stated that *Nidularia* Fr. has been in constant use for this group of fungi for practically one and a quarter centuries with only White (1902) using another name, i.e. *Granularia* Roth ex Nees, the publication by O. Kuntze (1891) having been almost completely ignored. However, *Nidularia* Fr. (1817) is illegitimate as it is a later homonym of *Nidularia* Bull. ex St.-Hil. (1805) which, in turn, is a synonym of *Cyathus* Hall. ex Pers. whilst the only other validly published name, *Granularia* Roth ex Nees (1820), is a later homonym of a Smut Fungus, *Granularia* Sow. (1815). The genus is, therefore, without a legitimate name and it is consequently proposed that *Nidularia* Fr. (1817) should be conserved against *Nidularia* Bull. ex St.-Hil. (1805) and *Granularia* Roth ex Nees (1820).

Mycocalia J. T. Palmer is separated from *Nidularia* Fr. (1817) and is published as a new genus on account of its distinctive peridial structure.

TYPIFICATION.

Nidularia Bull. ex St.-Hil. (1805).
N. vernicosa Bull. ex St.-Hil. = *Cyathus olla* (Batsch) ex Pers. (1801).
Nidularia Fr. (1817).
N. radicata Fr. = *Nidularia farcta* (Roth ex Pers.) Fr. (1823).
Granularia Roth ex Nees (1820).
G. pisiformis [Roth ex Tul.] O. Kuntze (1891) = *Nidularia farcta* (Roth ex Pers.) Fr. (1823).
Mycocalia J. T. Palmer, **gen. nov.**
M. denudata (Fr.) J. T. Palmer, **comb. nov.**

ACKNOWLEDGEMENTS.

I wish to thank Professor N. A. Burges for facilities for carrying out this research, Drs. R. W. G. Dennis (Kew), V. H. Heywood and Dennis Parkinson (Liverpool) for reading my manuscript and their useful suggestions, and Dr. M. A. Donk (Leiden), who has also been considering the status of *Nidularia* Fr. (1817) and was kind enough to put his notes freely at my disposal besides bringing to my notice the publication of J. St.-Hilaire (1805).

References

Benzoni, C. 1948: Gasteromiceti del Cantone Ticino (incluso Clatraceae e Falloidee). Boll. Soc. Tic. Sci. Nat. *43*, 17-64.

Bulliard, P. 1790: Herbier de la France, Champignons. Paris.

——. 1791: Histoire des Champignons de la France. Paris.

Cejp, K. 1958: Nidulariales — Hnízdovkotvaré *in* Flora ČSR, B. I. Praha.

Coker, W. C., & Couch, J. N. 1928: The Gasteromycetes of the Eastern United States and Canada. Chapel Hill.

Corda, A. J. C. 1842: Icones fungorum *5*. Praha.

Corner, E. J. H. 1932a: The fruit-body of *Polystictus xanthopus* Fr. Ann. Bot., Lond., *46*, 71-111.

——. 1932b: A *Fomes* with two systems of hyphae. Trans. Brit. mycol. Soc. *17*, 51-81.

Cunningham, G. H. 1944: The Gasteromycetes of Australia and New Zealand. Dunedin.

——. 1947: Notes on classification of the Polyporaceae. N.Z. J. Sci. Tech. A, *28*, 238-251.

De Toni, J. B. 1888: *in* P. A. Saccardo, Sylloge fungorum *7*. Padua.

Eckblad, F. E. 1955: The Gasteromycetes of Norway. Nytt. Mag. Bot. *4*, 19-86.

Fries, E. M. 1817: *in* E. M. Fries & J. Nordholm, Symbolae gasteromycorum ad illustrandam floram Suecicam. I. Lund.

——. 1823: Systema mycologicum *2.* Greifswald.

Fries, Th. C. E. 1921: Sveriges Gasteromyceter. Ark. bot. *17,* 1-63.

Hollós, L. 1904: Die Gasteromyceten Ungarns. Leipzig.

Jones, H. S. 1940: *in* H. G. Liddell & R. Scott, A Greek-English Lexicon, New edition (9th ed. old series). Oxford.

Killermann, S. 1931: Die *Nidularia* Fr. — Gruppe. Krypt. Forsch. bayer. bot. Ges. *2,* 194-198.

Kuntze, O. 1891: Revisio generum plantarum *2.* Leipzig.

Link, H. F. 1809: Observations in ordines plantarum naturales. Ges. nat. Freunde Berlin *3,* 33.

Lloyd, C. G. 1906: The Nidulariaceae or "Bird's-nest Fungi". Cincinnati.

Massee, G. 1889: A monograph of the British Gastromycetes. Ann. Bot. *4,* 1-103.

Moser, M. 1955: *in* H. Gams, Kleine Kryptogamenflora von Mitteleuropa, 2b. Stuttgart.

Nees von Esenbeck, C. G. 1820: Horae physicae Berolinenses collectae. Bonn.

Palmer, J. T. 1955: Observations on Gasteromycetes. 1-3. Trans. Brit. mycol. Soc. *38,* 317-334.

——. 1958: Observations on Gasteromycetes. VI. Three British species of *Nidularia* Fr. Section *Sorosia* Tul.: Ecology and distribution. Trans. Brit. mycol. Soc. *41,* 55-63.

Persoon, C. H. 1801: Synopsis methodica fungorum. Göttingen.

——. 1819: Traité sur les champignons comestibles. Paris.

Rea, C. 1922: British Basidiomycetae. Cambridge.

Roth, A. W. 1797: Catalecta botanica. Lipsiae.

St.-Hilaire, J. 1805: Exposition des familles naturelles et de la germination des plantes, *I.* Paris.

Sowerby, J. 1797-1815: Coloured figures of British fungi. London.

Tulasne, L. R. & C. 1844: Recherches sur l'organisation et le mode de fructification des champignons de la tribu des Nidulariées, suivies d'un essai monographique. Ann. sci. nat. sér. 3, *I,* Bot., 41-107.

White, V. S. 1902: The Nidulariaceae of North America. Bull. Torrey Bot. Cl. *29,* 251-280.

Winter, G. 1884: *in* L. Rabenhorst's Kryptogamen-Flora von Deutschland, Oesterreich u. der Schweiz, 2 Aufl., *1,* Abt. 1. Leipzig.

NEWS AND NOTES

"TO THE MEMORY OF HENNING HORN"

Whilst engaged in geological field work in a quarry near Paris in September 1960, Dr. Henning Horn af Rantzien lost his life when buried in a fall of rock. At the time of the accident he was accompanied by his wife, who escaped injury, and a French colleague, Dr. Louis Grambast, who was hurt. Dr. Horn, who was 38 years old, left, besides his wife, five children under 15 years of age.

Henning Horn af Rantzien was a versatile research worker. He had attained international reputation as a specialist on recent and fossil Charophytes, but had also made important contributions to the taxonomy and geography of living higher vascular plants. Over a long course of years Dr. Horn was attached to the Swedish Museum of Natural History, where he first worked in the Botanical Department, and later, in the Palaeobotanical Department. In addition, he was an esteemed teacher of Palaeobotany at the University of Stockholm. He was editor of Svensk Botanisk Tidskrift from 1948 to 1951.

In order to honour the memory of Dr. Horn, a subscription was started in Sweden in the autumn of 1960, its direct aim being to make possible the erection of a memorial to Henning Horn af Rantzien at Angarn Cemetery, Uppland, Sweden. Any surplus money deriving from the subscription will be placed at the disposal of Mrs. Horn. It seems desirable to extend the opportunity of participating in the subscription to Dr. Horn's friends abroad.

Contributions may be sent under the designation *"Henning Horns minne"* (To the memory of Henning Horn) to the Department of Geology, University of Stockholm, Kungstensgatan 45, *Stockholm Va,* or transferred to the postal-cheque account of this Department, No. 35 87 87.

Stockholm and Gothenburg, January, 1961

Sten Ahlner — Eric Hultén
Rudolf Florin — Britta Lundblad
Thore G. Halle — Carl Skottsberg
Ivar Hessland

PLANTS AND HUMAN AFFAIRS

Economic Botany has been taught at Harvard University since 1876. *Biology 104,* now called *Plants and Human Affairs,* a half-course open to properly qualified undergraduate students at Harvard University and Radcliffe College, is taught by Professor Paul C. Mangelsdorf and Dr. Richard Evans Schultes in the Laboratory of Economic Botany at the Harvard Botanical Museum. It comprises a consideration of the plants which are used by man (exclusive of ornamentals), their origins and history, botanical relationship and their roles in prehistoric and modern cultures and civilizations.

The laboratory work in this unique course has long attracted the attention of botanists and anthropologists, many of whom have requested copies of the mimeographed laboratory outlines for guidance or use in their own teaching.

Now for the first time the Laboratory Manual for Biology 104 has been published in offset form (set by A T F typesetter) in a saddle-stitched paper-bound edition. The Manual is divided into 12 weekly exercises as follows: I. Plant Classification and Economic Botany; II. Food Plants — 1 (Sugars, Cereals and other Starch Plants); III. Food Plants — 2 (Legumes, Nuts, Vegetables and Fruits); IV. Fibre Plants; V. Essential Oil Plants; VI. Caffeine Plants; VII. Stimulant and Narcotic Plants; VIII. Drug and Poisonous Plants; IX. Wood, Cork and Economic Fossil Plants — 1, Archaeological Plant Materials — 2; X. Fatty Oil and Wax Plants; XI. Rubber, Gum and Resin Plants; XII. Tannin and Dye Plants and Paper.

The 64 pages of text are supplemented by blank sheets at the end of each exercise; a chart showing phylogeny of the Plant Kingdom; 4 Ames Charts (on which much of the laboratory teaching is based) showing the Engler-Prantl System of the Gymnospermae, Monocotyledonae, Archichlamydeae and Metachlamydeae illustrated by important economic plants; and drawings of gymnospermous and dicotyledonary wood anatomy.

Since so many requests for the laboratory outlines have come in the past, the Botanical Museum has decided to offer for sale this Manual at a cost of $ 2.50 a single copy or $ 2.00 a copy for orders of ten or more. Order from and make cheques payable to the Botanical Museum of Harvard University, Cambridge, Massachusetts.

Schultes, R. E. & A. F. Hill: "Plants and Human Affairs" (Laboratory Manual for Biology 104, Harvard University) Published by Botanical Museum of Harvard University, Cambridge (1961).

CARRICHTERA

(78) Proposal for the conservation of the generic name **Carrichtera** DC. (1821) against *Carrichtera* Adanson (1763) both of the *Cruciferae.*

Carrichtera DC., Mém. Mus. Hist. Nat. Par., 7: 244. 1821 (*nom. cons. prop.*).

Holotype species: *Carrichtera annua* (L.) Aschers. (*Vella annua* L., *Carrichtera vellae* DC.).

Carrichtera Adanson, Fam. Pl., 2: 421. 1763 (*nom. rej. prop.*).

Discussion: *Carrichtera* Adanson must be regarded as a nomenclatural synonym of *Vella* L., Gen. Pl., ed. 5, 289 (1754) and therefore illegitimate.

Present-day usage in referring *Vella annua* L., Sp. Pl., ed. 1, 641 (1753) to the genus *Carrichtera* dates from De Candolle, Mém. Mus. Hist. Nat. Par., 7: 244 (1821) where the two genera *Vella* and *Carrichtera* are for the first time delimited and typified. The same classification is repeated in DC., Syst. Veg., 2: 639-641 (1821) and in DC., Prodr., 1: 223-224 (1824), and has since been followed by O. E. Schulz (in Engl., Pflanzenr., iv. 105: 41 and 44. 1923; Engl. & Prantl, Pflanzenfam., ed. 2, 17B: 375-377. 1936) as well as by the majority of European botanists.

It is suggested that the name *Carrichtera* should be conserved in the sense proposed by De Candolle, so as to avoid the regrettable necessity of coining a new generic name for the single species *Carrichtera annua* (L.) Aschers. There is no available alternative name for the genus. Several authors (Green and Sprague in Kew Bull. 1925: 51; 1926: 99; A. Rehder in Journ. Arnold Arb., 8: 22-24.

1927; Green, Prop. Brit. Bot., 170. 1929) have cited *Vella annua* L. as the lectotype of the genus *Vella*, and have suggested that the second Linnean species, *V. pseudocytisus*, should be transferred to the genus *Pseudocytisus* O. Kuntze (in Post and Kuntze, Lex. Gen. Phan., 464. 1904). This typification runs counter to De Candolle's classification and to the present proposal. While it is true that *Vella annua* typified the genus *Vella* in editions of the Genera Plantarum published prior to 1753, after that date Linnaeus modified his circumscription of the genus to accommodate both *V. annua* and *V. pseudocytisus*. If *Vella annua* is accepted as the type of *Carrichtera* DC., the sole residual Linnean species, *Vella pseudocytisus*, becomes the type of the genus *Vella* L.

Proposed by: R. D. Meikle (Kew).

Note: Mr. Meikle's proposal points to an important principle of typification. It is always necessary to take into account the fact that Linnaeus regarded the genus, rather than the species, as the fundamental unit of taxonomy, and that only the descriptions of ed. 5 of his *Genera Plantarum* (1754), together with the circumscription indicated by the species included in the genera in the *Species Plantarum* (1753) should be taken into account for purposes of typification. In the present case, it has been shown that prior to 1753, the circumscription of *Vella* included only *V. annua*, and earlier authors (Rehder, Sprague, Green) have taken that species as the type. In 1753, however, Linnaeus changed the circumscription (and the generic description) to include *V. pseudocytisus*, and De Candolle was at liberty to take the latter as lectotype of the generic name. It has never been shown that this choice was erroneous in the sense of Art. 8, and it should be accepted.

A. A. Bullock (Kew)

SCHOLARSHIP IN MYCOLOGY

The Gertrude S. Burlingham scholarship in mycology for advanced predoctoral study at The New York Botanical Garden will be available for the summer of 1961. The stipend is $ 700; work under this appointment may begin at any time after June 1 and should continue for approximately 3 months. Nominations or applications should be sent before April 15 to:

The Director
The New York Botanical Garden
New York 58, New York

NOTICES OF BOOKS

Desmidiales of the U.S.S.R.

Flora sporovych rastenij SSSR (Flora plantarum cryptogamarum URSS) V. *Conjugatae* (2). C. C. Kossinskaja: *Desmidiales* 1. Publ. by Akademija Nauk SSSR, Moskou/Leningrad, 1960. (706 pp., 87 tables, 122 illustrations and distribution maps, keys and descriptions, extensive bibliography, in Russian. Price 20,50 r.).

The genus Babiana

G. Joyce Lewis: The genus Babiana. A monograph on this Iridaceous genus with keys and descriptions, historical nota and bibliography. Publ. as Supplementary Vol. III of the Journal of South African Botany, 1959. (149 pp., 23 coloured and black and white plates and 10 photographs).

Fossilium Catalogus

Fossilium Catalogus. II: Plantae, ed. W. Jongmans, pars 44. Filicales, Pteridospermae, Cycadales 17 by W. Jongmans † & S. J. Dijkstra. In this part all species of the above mentioned groups are listed from Linopteris up to Mariopteris, p. 1453-1596. (Publ. by W. Junk, the Hague, December 1960. Price D.fl. 44.—, subscription price D.fl. 38.50).

Handbook of hardwood trees

G. Krüssmann: Handbuch der Laubgehölze. This handbook of hardwood trees appears in issues since 1959. The last issue of the first volume appeared at the end of 1960. A second volume will complete the work, which gives descriptions of hardwood trees with their cultivars in alphabetical order hardy in Europe with synoptical keys for larger genera. Vol. I: Abelia-Helwingia. Publ. by Paul Parey, Berlin/Hamburg. In german. (VI and 495 pp., 36 pages on terminology, author index; 305 figs.; 164 tables with 683 pictures being largely photographs of plants often in their natural habitat and nature-prints of leaves; maps of geographical distribution for several genera. Price 148.— D.M., subscription-price for Vol. II 18,60 D.M. per issue).

Coniferous trees

G. Krüssmann: Die Nadelgehölze. A handbook of coniferous trees for the greater part hardy in central Europe, giving descriptions of 1483 species, varieties and cultivars in alphabetical order, with an introduction to systematics of conifers. Publ. by Paul Parey,

Berlin/Hamburg, 1960, 2*nd* edition. In german. (343 pp., 226 photographs and 193 drawings. Price 46.— D.M.).

A botanical atlas

O. Hagerup & V. Petersson: Botanisk Atlas. Vol. II: Mosses, Ferns, Conifers, Horsetails and Lycopods with a special chapter on phylogeny. This volume includes drawings of about half the Danish mosses and liverworts, all the Danish ferns, lycopods, horsetails and conifers with appropriate text in Danish and English. Publ. by E. Munksgaard, Copenhagen, 1960. (299 pp. mainly illustrations. Price 76.— D.kr.).

Flora of Madagascar

Flore de Madagascar et des Comores. H. Humbert: 189. *Composées,* Tome I. Paris 1960. (338 pp., 64 plates).

Orchidaceae of Trinidad and Tobago

R. E. Schultes: Native orchids of Trinidad and Tobago. This work is the first complete and up-to-date scientific treatment of the Orchidaceae of these islands. Lavishly illustrated with more than 130 photographs and line drawings it gives detailed descriptions of all species with keys and notes on distribution. Publ. by Pergamon Press, Oxford/London/New York/Paris as Vol. 3 of the International Series of Monographs on Pure and Applied Biology-Botany Division, 1960. (275 pp., unnumbered line drawings and photographs. Price £ 5.—).

Pilgrimage for Plants

Kingdon-Ward, F.: Pilgrimage for Plants, with a biographical introduction and bibliography by William T. Stearn. — George G. Harrap & Co., Ltd., London 1960.

A posthumous publication, edited by Jean Kingdon-Ward, containing Kingdon-Ward's last essays, an essay on "Geography and Living Standards in South-east Asia" as well as Dr. Stearn's biographical introduction with a summary of K.-W.'s journeys and bibliography.

Names of Swedish ornamental plants

Hylander, N.: Våra prydnadsväxters namn, på svenska och latin, second revised edition, LTs Förlag, Uppsala 1960.

An extensive list of the latin names of ornamental plants cultivated in Sweden together with their swedish equivalents, a swedish-latin register and a bibliography of the main literature.

Arizona Flora

Thomas Kearney, Robert H. Peebles and collaborators: Arizona Flora. — Second edition with supplement by John Thomas Howell, Elizabeth McClintock and collaborators — 1960 University of California Press, Berkeley and Los Angeles. Price $ 12.50. (1086 pp., 45 black and white photographs).

A very welcome new edition of the earlier *Flowering Plants and Ferns of Arizona,* issued by the U.S. Department of Agriculture in 1942. The supplementary section prepared by Dr. J. T. Howell and Dr. E. McClintock comprises fifty pages. The book gives keys to and describes 3438 species of flowering plants, ferns and fern allies growing in the wild in Arizona. Introductory chapters describe the topography, geology, soils and climate of Arizona, the several types of vegetation etc.

NATIONAL SCIENCE FOUNDATION

The Division of Biological and Medical Sciences of the National Science Foundation announces that the next closing date for receipt of basic research proposals in the Life Sciences is May 15, 1961. Proposals received prior to that date will be reviewed at the summer meetings of the Foundation's advisory panels and disposition will be made approximately four months following the closing date. Proposals received after the May 15, 1961 closing date will be reviewed following the fall closing date of September 15, 1961.

Inquiries should be addressed to the Biological and Medical Sciences Division, National Science Foundation, Washington 25, D.C.

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"Taxon" is directed by: Prof. J. Lanjouw, Chief Editor, and Dr. F. A. Stafleu, Assistant Editor. All correspondence should be sent to the International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.
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BERNARD OGILVIE DODGE

(1872 - 1960)

H. W. Rickett (New York)

Bernard Ogilvie Dodge, mycologist, pathologist, and geneticist, died 9 August 1960, in New York.

Dr. Dodge made valuable contributions in each of the fields in which he worked. His earliest researches were in the cytology of fungi; on the supposed "double reduction" in Ascomycetes he had the temerity to disagree with his professor, Robert Almer Harper; there is now no doubt that Dodge was right. After receiving the doctorate from Columbia University in 1912, he was for a time a teacher in that institution. At this time he began to study plant diseases, and in 1920 he went to Washington as pathologist (for diseases of fruits) in the United States Department of Agriculture. His papers on rusts of *Rubus* and of *Juniperus* were definitive. He continued to be concerned with morphology and cytology of fungi, and about 1927 became interested in *Neurospora*. In 1928 he returned to New York as plant pathologist of The New York Botanical Garden, where he remained until his retirement in 1947. Here he continued to study plant diseases and to carry forward his classic researches on the cytology and genetics of *Neurospora* to which our knowledge of chromosomes and of genes (sensationally increased in recent years) owes such a debt.

Dr. Dodge's early education was obtained in the schools of the small Wisconsin town of Mauston, where he was born 18 April 1872; and in Milwaukee normal school, where he prepared himself for teaching. He was for several years a teacher in Wisconsin schools. Then he decided to continue the study of botany in the University of Wisconsin, which awarded him the bachelor's degree in 1909. When he came to New York he became a member of the Torrey Botanical Club, which he subsequently served as Secretary-Treasurer, Editor, and President. He was President of the Mycological Society of America and of The American Phytopathological Society, and was elected to membership in the National Academy of Sciences of the United States, a considerable attainment for the country high-school teacher from Wisconsin.

Dr. Dodge had a singularly lovable character. His enthusiasm for his duties and his researches, his good humor, his warm humanity endeared him to all his colleagues. We shall long miss the cheerful cascades of whistled notes that announced his comings and goings in the Museum Building of The New York Botanical Garden.

1 MAY 1961

THE CITATION OF AUTHORS OF REVALIDATED NAMES

M. A. Donk (The Hague)*

The citation of an author who revalidated a name is only very summarily treated in the Paris Code (1956).

Recommendation 50D.—"The citation of an author who published the name before the starting point of the group concerned is indicated, when considered useful or desirable, preferably between square brackets or by the use of the word *ex*. This method is especially applicable in mycology when reference is made to authors earlier than Fries or Persoon.

"Examples: *Lupinus* [Tourn. ...] L. ..., or *Lupinus* Tourn. ex L. — *Boletus piperatus* [Bull. ...] Fr. ..., or *Boletus piperatus* Bull. ex Fr."

The generous provision of two different kinds of notation is somewhat surprising: one of two methods would appear superfluous if the two examples (of *Lupinus* and *Boletus piperatus*) are really strictly comparable. This they are not and I have suggested recognizing this fact by proposing the following new recommendation (Donk *in* Taxon **6**: 255-256. 1957).

Recommendation 50D.—"The citation of an author who published the name before the introduction of the binomial system of Linnaeus is indicated, when considered useful or desirable, preferably between square brackets.

"Example: ... *Lupinus* [Tourn.] L."

In the mean-time this proposal was accepted by the Congress at Montreal, which leaves 'ex' to connect the post-Linnean author of a not validly published name dating from after 1753 with the author who validly published it. Because the only kind of pre-Linnean names that can be taken up in Linnaeus's binomial system are generic ones, one will find the use of the square brackets restricted to the category of the latter.[1]

Originally Linnaeus's "Species Plantarum" was accepted as the general starting-point for the nomenclature of all plants, but in 1910 and afterwards 'later' starting-points were introduced for certain groups of cryptogamic plants. This amounted to a whole-sale reduction of validly published names to the status of not validly published names; such names are now sometimes called d e v a l i d a t e d n a m e s.

Discussions with other mycologists have indicated that there is still one difficulty which has to be cleared in relation to Art. 13 (f), part of which runs:

"Names of Fungi caeteri published in other works between the dates of the first (vol. 1) and last (vol. 3, part 2 and index) parts of Fries, *Systema* [*Mycologicum*] which are synonyms or homonyms of names of any of the Fungi caeteri included in the *Systema* do not affect the nomenclatural status of names used by Fries in this work."

It has become customary also to follow the example of '*Boletus piperatus* Bull. ex Fr.' in all cases that Fries accepted a validly published name in the "Systema", but this is not defensible because the use of this notation is not only faulty but may also obscure some basic information that author's citations are supposed to offer. For instance, '*Peziza minima* Fr.' indicates that the name was validly published by Fries (in 1828); and '*Thelephora viticola* Schw. ex Fr.' would mean that the invalidly

* Rijksherbarium, Leiden.

[1] Quite recently square brackets were used in still a different way: compare Dennis, Orton, & Hora (New Check List Brit. Agar. Boleti 10. 1960): "Square brackets are used to enclose a pre-Friesian author when that author used the specific epithet in question attached to a different generic name or a different rank from that of the validating author."

published name *Thelephora viticola* Schw. was validly published by Fries (1828). Yet, the actual situation in the latter case is that *Thelephora viticola* Schw. (Syn. Fung. Car. sup. *in* Schr. naturf. Ges. Leipzig **1**: 107. 1822) was already validly published by von Schweinitz himself, and Fries took it up in a volume of the starting-point book (Elench. **1**: 205. 1828): in matters of priority and homonymy the name *Thelephora viticola* counts already from the date of its publication by von Schweinitz and not from the date that Fries took it up. What Fries did (according to Art. 13) was merely to 'sanction' the name: if it could be demonstrated that the species received another and earlier validly published name, in this case, between January 1, 1821 and the publication of von Schweinitz's "Synopsis" in the second half of the year 1822, von Schweinitz's name is to be maintained because it was accepted by Fries in the starting-point book. For cases of this kind it is suggested that Fries's name be connected with that of the validating author by means of a colon: '*Thelephora viticola* Schw.: Fr.' In this way a notation like '*Thelephora episphaeria* (Schw.) ex Fr.' becomes unambiguous again: Fries validly published a not yet validly published name, "*H*[*imantia*] *episphaerium*. Schwein.! in litt."

As far as mycology is concerned the colon is always followed by 'Fr.' because, of the two starting-point authors (Persoon, 1801; Fries, 1821-32), only Fries's starting-point book was published at intervals. The use of ': Fr.' indicates that Fries accepted a name in the starting-point book that was previously v a l i d l y p u b l i s h e d. A few additional applications of the proposed notation may now be given.

1. *Favolus canadensis* Klotzsch: Fr.

   Favolus canadensis Klotzsch *in* Linnaea **7**: 197. 1832; Fr., Syst. mycol. **3** (Ind.): 90. 1832.

2. *Guepinia helvelloides* (DC. ex Pers.: Fr.) Fr.

   Tremella helvelloides DC., Fl. franç. **2**: 93. 1805 (devalidated name). — *Tremella helvelloides* DC. *ex* Pers., Mycol. europ. **1**: 100. 1822; Fr., Syst. mycol. **2** (1): 211. 1822. — *Guepinia helvelloides* (DC. ex Pers.: Fr.) Fr., Elench. **2**: 31. 1828.

3. *Cenangium pulveraceum* (A. & S. ex Pers.) Fr.

   Peziza pulveracea A. & S., Consp. Fung. nisk. 342 pl. 8 f. 2. 1805 (devalidated name). — *Peziza pulveracea* A. & S. *ex* Pers., Mycol. europ. **1**: 267, 327. 1822. — *Cenangium pulveraceum* (A. & S. ex Pers.) Fr., Syst. mycol. **2** (1): 181. 1822.

4. *Peziza stipata* Fr., Syst. mycol. **2** (1): 106. 1822 is a later homonym of *Peziza stipata* Pers. *ex* Pers., Mycol. europ. **1**: 270. 1822, but being published in the starting-point book it is legitimate, and Persoon's name the illegitimate one.

There is no end if one wants to make the author's citation more cumbersome in connection with revalidated names. Thus one may come across the notation *Amanita muscaria* (L. ex Fr.) Pers. ex S. F. Gray, which is supposed to express: that the name *Agaricus muscarius* L. (devalidated name) was altered into *Amanita muscaria* (L.) Pers. before the starting-point date; was validly published (revalidated) as *Agaricus muscarius* L. ex Fr.; and, finally, that Persoon's pre-starting-point recombination was validly published after January 1, 1821: *Amanita muscaria* (L. ex Fr.) Pers. ex S. F. Gray. In my opinion the mention of Persoon is superfluous here: *Amanita muscaria* (L. ex Fr.) S. F. Gray.

One simplification that is already currently and silently applied is not to insist on an extra pair of brackets if an epithet has been used in three different combinations by the three authors following the name. For instance one does not write *Amplariella rubescens* {(Pers.) ex Fr.} E. J. Gilb., but simply *Amplariella rubescens* (Pers. ex Fr.) E. J. Gilb.; synonymy, *Amanita rubescens* Pers. 1797 (devalidated name) ≡ *Agaricus*

rubescens (Pers.) ex Fr. 1821 ≡ *Amplariella rubescens* (Pers. ex Fr.) E. J. Gilb. 1940.[2]

The notation '*Agaricus muscarius* L. ex Fr.' does not show whether Fries (re)validated the name in the starting-point book or in one of his other publications. One may be tempted to provide somehow for this omission in all those cases in which the notation ': Fr.' is not represented in the authors' citation and yet Fries accepted the name in some form in the starting-point book. For instance, one may suggest marking the starting-point book revalidations in such cases by a special sign, like a dagger: '*Agaricus muscarius* L. ex †Fr.' However, it seems wise to plead for simplification once more and leave out from the authors' citation any special indication that Fries himself (re)validated a name in the "Systema". The number of revalidations made by Fries in other publications than the "Systema" are relatively few and hardly make it worth while to mark all the cases where the revalidations occurred in the starting-point book.

From the pertinent Rules and Recommendations one has to conclude that author's citations represent important clues, viz. (i) to the d a t e of the original description of a name, and, in recombinations and similar names, to the date of the isonym, dates being all important in matters of priority and homonomy; and (ii) to the p l a c e of the original description which may inform us about (iii) the t y p e and other questions. The formula '*Caldesiella viridis* (A. & S. ex Fr.) Pat.' directs us to the original publication of the name *Sistotrema viride* by von Albertini & von Schweinitz in 1805; it eventually will lead us also to the revalidated name *Hydnum viride* (A. & S.) ex Fr. (1821) and to the information that in this form the name was validly published by Fries in a volume of the starting-point book; and, moreover, to the date (1900) from which Patouillard's recombination starts to count in matters of priority and homonymy. If one considers the authors' citation of *Caldesiella viridis*, as given above, correct, then it also informs us that the type of *Sistotrema viride* A. & S. (the devalidated name), of *Hydnum viride* Fr. (the revalidated name), and of *Caldesiella viridis* Pat. is one and the s a m e for all three names and i n e v i t a b l y the type of *Sistotrema viride*. In the case of a revalidated fungus name an additional clue is needed (iv) in case a name was validly published before it was 's a n c t i o n e d' by Fries in the "Systema": this is the notation ': Fr.' suggested above (but which is thought to be superfluous in the present case).

Author's citations are a cumbersome addition to plant names. If one uses the name repeatedly on the same occasion and if one has somewhere on that occasion given the author's citation, it seems unnecessary to repeat it each time as many authors do. I do not believe that Art. 46 of the Code implies that the author's citation has to be carried on and on if a name is used more than once.

At this point I may be permitted to return to what I still consider an improvement. In order to differentiate between validly published names derived from devalidated names and from other not validly published names, I further proposed the following recommendation (Donk *in* Taxon **6**: 256. 1957). Although it did not succeed in obtaining a majority at Montreal, it nevertheless may still be useful to mention it and to discuss it briefly. There is no harm in using it.

"Recommendation 50D (bis).—The citation of an author who would validly have published the name if the starting point of a later date than 1 May 1753 of the group concerned and listed in Art. 13 had not been adopted, is connected by the word *per* with the citation of the author who actually validly published the name.

"Example: ... *Boletus piperatus* Bull. per Fr."

[2] Dennis & al. (see footnote 1) would write *Amplariella rubescens* ([Pers.] Fr.) E. J. Gilb.

The substitution of 'ex' by 'per' in connection with revalidated names is not intended to get rid of 'ex'; it is simply a recognition of the fact that revalidated names deserve some special treatment. Compare,

Recommendation 46A.—"When a name has been proposed but not validly published by one author and is subsequently validly published and ascribed to him by another author, the name of the former author followed by the connecting word *ex* may be inserted before the name of the publishing author. .... If it is desirable or necessary to abbreviate such a citation, the name of the publishing author, being the more important, should be retained.

"Examples: *Havetia flexilis* Spruce ex Planch. & Triana ...."

If one admits 'per' in addition to 'ex', the notation *Havetia flexilis* Spruce ex Planch. & Triana means that Planchon & Triana took up a name not validly published which is not a devalidated name; and the notation *Boletus piperatus* Bull. per Fr., that Fries revalidated a name. If, moreover, my interpretation of the Code as to the typification of revalidated names is deemed acceptable, then 'per' gets still more meaning (Donk *in* Taxon **6**: 245-256. 1957).

Let us once more take into consideration the above mentioned case of *Amanita muscaria*. The notation *Amanita muscaria* (L. ex Fr.) Pers. ex S. F. Gray, and its shortened form *Amanita muscaria* (L. ex Fr.) S. F. Gray convey incorrect information. Neither Persoon nor Gray recombined the epithet of *Agaricus muscarius* L. ex Fr.; Persoon recombined the epithet 'muscarius L.' and nothing else; and Gray merely applied the already made combination '*Amanita muscaria* (L.) Pers.' The latter author was unaware of the existence of Fries's "Systema" when he used the recombination.

By the substitution of 'ex' by 'per' and the precise formulation of what 'per' stands for, such incorrect information is avoided. *Amanita muscaria* (L. per Fr.) S. F. Gray carries all essential information that is required—and no incorrect statements. It states (i) that Linnaeus introduced the devalidated name [*Agaricus*] *muscarius;* (ii) that the latter name starts counting in priority considerations when Fries accepted it; and (iii) that Gray was the first to use the combination *Amanita muscaria* after the later starting-point date.

If one accepts 'per' another of the above examples gains in exactness: '*Thelephora episphaeria* (Schw.) ex Fr.' then means that Fries validly published a not yet validly published name—not even a devalidated one.

The following remark has no bearing on the subject as indicated in the title of this note, but in connection with the loose use of 'ex' in the Code (1956) attention may be drawn to the next item.

Recommendation 50B.— ... When an author has published as a synonym a manuscript name of another author, the word *ex* should be used in citations to connect the names of the two authors.

"Example: ... *Myrtus serratus* Koenig ex Steudel ... pro syn."

Why the use of 'ex' at all (according to Recommendation 46A indicating that the name was v a l i d l y published by the second author) if it expresses something that is palpably not true, and, therefore, must promptly be rendered null and void again by adding 'pro syn.'? Perhaps in these cases a semicolon will do? Example, *Myrtus serratus* Koenig; Steudel (pro syn.).

NOMINA GENERICA CONSERVANDA ET REJICIENDA SPERMATOPHYTORUM VII* BIBLIOGRAPHY

H. W. Rickett (New York) and F. A. Stafleu (Utrecht)

In this bibliography we have tried to include every name of a botanist and every work cited in the foregoing list with the exception of a few generally available and very recent works from living authors. For the names of persons and their dates of birth and death we are indebted chiefly to the biographical index compiled by John Hendley Barnhart (1871-1949) and now preserved at The New York Botanical Garden.

So much of each title is reproduced as seems germane to identifying the work and providing information about its contents and provenance. Immediately below this appear the abbreviation used in citing the work and the Dalle Torre and Harms numbers that identify the genera under which it was cited. Next comes the date or dates of publication, generally followed by a discussion of our sources of information and other notes. Finally references are given to the places of publication of our bibliographic sources.

Titles of articles in serials and references to serials are not included; the latter appear in the citations themselves. A list of serials, with the abbreviations used in our list, and data on their provenance, concludes the bibliography.

As will be seen, we naturally owe much to the bibliographic researches of many botanists of the past and the present. The bibliography of the *Flora Malesiana* (Fl. Males. ser. 1. 5(4), 1954), by William Thomas Stearn and Mrs. M. J. van Steenis-Kruseman, has been especially valuable. Our own contribution to the accurate dating of many old works results largely from examination of the older literary serials, such as Gött. Gelehrte Anz., Jour. Gén. Lit. Fr., Allg. Lit. Zeit., in which the publication of many contemporary botanical works is announced and their contents often reviewed [1]).

We have been often impressed by the slender basis upon which certain botanists (notably Otto Kuntze) have assigned exact dates to botanical works, and sometimes by the faulty logic by which some of these persons have arrived at conclusions. We hope that we may not be subjected to the same criticism. We have tried to avoid guessing at dates, and to indicate what dates we regard as not certainly determined. However, when no other information is available, we are authorized by the *International Code of Botanical Nomenclature* to adopt the date stated in the work itself; and this we have done.

ABBREVIATIONS

Jan (Mensis)	Januarius	Apr	Aprilis	Jul	Julius	Oct	October
Feb	Februarius	Mai	Maius	Aug	Augustus	Nov	November
Mar	Martius	Jun	Junius	Sep	September	Dec	December

Prim.	Primo, at first, early.
Med.	Medio, in the middle.
Sero	Sero, late.
Sem.	Semester (from Semestris), period of six months.
Trim.	Trimester, period of three months (quarter of year).
Quadrim.	Quadrimester, period of four months.

*) Continued from Taxon 9: 161. 1960.

1) Partly because the library of The New York Botanical Garden has been closed, for renovation of the building, during several months, by far the greater share of the work on the bibliography has been borne by the junior author.

Typ. cons.	Typus conservandus, type to be conserved.
Nom.	Nomen, name.
Cons.	Conservandum, to be conserved.
Rejic.	Rejiciendum, to be rejected.
Illeg.	Illegitimum, illegitimate (contrary to one or more articles of the Code).
Orth. mut.	Orthographia mutata, changed orthography.
Excl. syn.	Exclusa synonyma, synonyms excluded.
Nud.	Nudum, naked (lacking diagnosis and description).
Ref.	Reference(s).
Rev.	Review(s).

BIBLIOGRAPHY

Abat, Pedro (fl. 1780-1792).
(1937)

Acharius, Erik, 1757-1819.

LICHENOGRAPHIA/UNIVERSALIS./..../
1810./
Lich. Univ. (8473)

Adanson, Michel, 1727-1806.

FAMILLES/DES/PLANTES./..../
MDCCLXIII./
Fam. [131 references]

In 2 volumes; vol. 2, 1763 trim. 3, prob. August; vol. 1, 1763 trim. 4, or 1764 trim. 1.

According to Kuntze, late in 1762 or early in 1763. His conclusion is based on the date of certifying by the Académie (1 Sep 1762) and the inclusion of names from Linnaeus, Sp. Pl. ed. 2. vol. 1 (Sep 1762). These data, of course, do not warrant the conclusion. Names taken from Linnaeus, l.c., were obviously inserted *later* than Sep 1762. The fact that printing was authorized at that time means little in general. From the non-inclusion of names from vol. 2 of the Sp. Pl. the conclusion is that the work was in the printers hands before Adanson saw that volume, which would be some time after Jul 1763. The Fam. Pl. therefore went to the printer between Sep 1762 and Jul 1763. The reviews of Adanson's work in the Journal Encyclopédique (published in Bouillon), bring proof of the publication in the middle of the year. On 15 Sep 1763 the *second* volume had just been published in advance of the first, because the book was needed for the 'cours de Botanique' given at the Paris botanical garden ('Jardin du Roi'). The *first* volume was published later, and reviewed in this Journal only in the issue of 15 Mai 1764. Further investigation is still needed because the above data stem from one source only. The date "1763 prim." was arbitrarily assigned to the work for the purposes of our list because the above information was not available to us before September 1960.

Rev.: Journ. Enc. Bouillon **1763** (6^3): 144. 15 Sep 1763 (vol. 2), **1764** (4^1): 31. 15 Mai 1764, (4^2): 57. 1 Jun 1764 (vols 1 and 2). Gött. Gelehrte Anz. **1764**: 843, 862. 1 Sep 1764.

Ref.: Kuntze, Rev. Gen. **1**: cxxiii. 1891.

Agardh, Carl Adolf, 1785-1859.

APHORISMI BOTANICI/..../
...MDCCCXVII/...
Aphor. (1648)

A series of sixteen papers (1817-1825); the one cited is a dissertation by Johannes Dahl (p. 102 seq.) defended 19 Jun 1822.

Ref.: Abstr. Proc. Linn. Soc. 412. 15 Feb 1823, p. 3.

Aiton, William, 1731-1793.

HORTUS KEWENSIS;/..../
MDCCLXXXIX./
Hort. Kew. (221, 1236, 2467, 3796)
In 3 volumes, 1789 med. (?)

O. Kuntze assumed that this work was published in the first semester of 1789. However, on p. xv of volume I, there is a reference to Bot. Mag.* which might suggest that Aiton's work was published around or after June 1789. On p. xxi L'Héritier's *Stirpes Novae* fasc. 5, published towards the end of January 1789, is cited. O. Kuntze's assumption was followed by J. Britten (see below; he gives information on authorship, etc.) and Stearn

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* Curtis Magaz. London 1787 is there quoted as far as no 29, published June 1, 1789. No. 29 contains plates 85, 86 and 87, (cited also by Aiton) bearing the date 1 June 1789. Aiton may of course have seen these plates before publication, but these citations in Aiton certainly do not point to a publication early in 1789.

and v. Steenis-Kruseman ('probably in the first quarter'). However, the reviews only in December 1789 in the *Gentleman's Magazine*, in Jan 1790 in the *Monthly Review*, in June 1790 in the *Journal Encyclopédique*, and the late reviews in the German periodicals all suggest that the publication was rather later in the year. In our list we have accepted 'trim. 1' but until further evidence is brought forward it seems better to assume that the book was published in the middle of the year, perhaps not even antedating A. L. Jussieu's *Genera Plantarum* (Aug 1789).

Ref.: Kuntze, Rev. Gen. **1**: cxxiii. 1891.
Britten, Journ. Bot. **50** (suppl. 3): 1-16. 1912.
v. Steenis-Kruseman et Stearn, Fl. Males. **4**(5): clxvi. 1954.
Stafleu, Taxon (to be published 1961).

Rev.: Allg. Lit. Zeit. **1790**(1): 609. 18 Mar 1790.
Göt. Gelehrte Anz. **1790**: 1949. 4 Dec 1790.
Gent. Mag. **1789**: 1118. Dec 1789.
Mon. Rev. London **1**: 44. Jan 1790 (1 Feb).
Journ. Enc. Bouillon **1790**(6): 338. 1 Jun 1790.

Aiton, William, 1731-1793; Aiton, William Townsend, 1766-1849.

HORTUS KEWENSIS;/..../...SECOND EDITION.../..../
Hort. Kew. ed. 2. (1494, 1534, 2965a, 3032, 3038, 3042, 3051, 3753, 3754, 3868, 8994)
In 5 volumes, 1 (1810, Aug-Nov), 2 (1811), 3 (1811, prob. Oct), 4 (1812), 5 (1813, prob. Dec).

Edited by W. T. Aiton; authors of the botanical descriptions: J. Dryander and R. Brown.

Ref.: Britten, Journ. Bot. **50** (suppl. 3): 1-16. 1912.
v. Steenis-Kruseman, Fl. Males. **4**(5): clxvi. 1954.

Alefeld, Friedrich Georg Christoph, 1820-1872.
(5022a)

Allamand, Frédéric (fl. 1756-1776).
(4189)

Allemão, see Freire Allemão.

Allioni, Carlo, 1728-1804.

FLORA/PEDEMONTANA/..../
Fl. Pedem. (143, 5453)

In three volumes, published between Apr and Jul 1785. One copy was sent to Banks on 27 Jul, another copy was received by Villars on 31 Jul. On 6 Apr 1785 Allioni wrote to Banks that the book was not yet ready.

Ref.: Mattirolo, Malpighia **18**: 211. 1904.
Mattirolo, Scritti Bot. Carlo Allioni, 1904.
Breistroffer, Proc. Verb. Mens. Soc. Dauph. Ethn. **182-184**: [6] 1948.
Becherer, Candollea **14**: 113. 1953.
Dawson, The Banks Letters 16. 1958.

Andrews, Henry C. (fl. 1799-1830).

/..../THE BOTANISTS REPOSITORY/..../
Bot. Repos. (1021, 2023, 3624, 4031, 5155, 6262 p, 6277, 6450)
In 10 volumes, 1797-1815.

For precise dates of publication see Britten.

Ref.: Harms, Notizbl. Bot. Gart. Berlin **4**: 243. 1906.
Britten, Journ. Bot. **54**: 236. 1916.

Andrzeiovski, Antoni (Lukianovich), 1785-1868.
(3050)

Arduino, Pietro, 1728-1805.
(3676)

Arnott, George Arnott Walker, 1799-1868.
(Sometimes as Walker-Arnott, George Arnott.) (17, 2103, 7556, 8039)

Arruda da Camara, Manoel, 1752-1810, see Koster, Henry.

Ref.: Britten, Journ. Bot. **34**: 242, 243. 1896.

Ascherson, Paul Friedrich August, 1834-1913.

Flora/der/Provinz Brandenburg,/..../
Fl. Prov. Brand. (3323)

Vol. 1, pp. i-xxii, 1- 320	Jan	1860.
pp. i-xii, 321-1034		1864 quadrim. 1.
2, pp. 1-210		1859.
3, pp. 1-143		1859.

For dates of issue see vol. 1, p. xi and Ascherson.

Rev.: Bot. Zeit. **22**: 121. 1864.

Ref.: Ascherson, Verh. Bot. Ver. Brand. **5**: 246. 1863.

Ascherson, Paul Friedrich August, 1834-1913; Graebner, Karl, Otto Robert Peter Paul, 1871-1933.

SYNOPSIS/DER/MITTELEUROPÄISCHEN FLORA/..../
Syn. Mitteleur. Fl. (329)

Twelve volumes, incomplete, 1896-1930, publication dates on back of title pages. Continued, after Ascherson's death, by P. Graebner and P. Graebner f.

Aubert du Petit-Thouars, Aubert, 1758-1831 ("Thouars").

HISTOIRE/DES VÉGÉTAUX/RECUEILLIS/SUR LES ISLES DE FRANCE, LA RÉUNION (BOURBON)/ET MADAGASCAR./..../AN XII (1804)/

Hist. Vég. Isles France, Réun. Madag. (1559, 6979)

Edition 1, entitled Plantes des îles de l'Afrique australe.... consisted of one part containing plates nos. 1-8 plus two plates of Cycas. It was published Germinal XII (22 Mar-20Apr 1804).

Edition 2, of which the title is given above, was apparently a re-issue of ed. 1 with another title page, and contained 8 plates. It bears the date 'An XII' on the title page (1804, ante 22 Sep).

For further alternative titles and editions see Woodward and Hiern.

Ref.: Flora **1822**(1) (Beil. 1): 2. 1822.
Woodward, Journ. Bot. **38**: 394. 1900.
Hiern, Journ. Bot. **38**: 492. 1900.

Rev.: Journ. Gén. Lit. Fr. **7**(4): 100. Apr 1804.

GENERA NOVA/MADAGASCARIENSIA, /..../

Gen. Nov. Madag. (3225, 5525, 5528, 6254)
One volume, 1808 (?).

For date see Miltitz and Hiern. Later ed. (original sheets used) in MÉLANGES/DE BOTANIQUE/ET/DE VOYAGES;/PAR AUBERT DU PETIT-THOUARS,/..../PREMIER RECUEIL./A PARIS,/..../1811./

To this is prefixed OBSERVATIONS/SUR LES/GENERA NOVA MADAGASCARIENSIA (1)-(4). Reference in this to Ann. Mus. Hist. Nat. Paris **15**: 354, 355 (1810).
Also included in Roemer, Collect. Bot. 1809.

Ref.: Woodward, Journ. Bot. **38**: 394. 1900.
Hiern, Journ. Bot. **38**: 393. 1900.
Miltitz, Bibliotheca Bot. 196. 1829.

EXTRAIT DE TROIS MÉMOIRES LUS A LA PREMIÈRE CLASSE DE L'INSTITUT, SUR L'HISTOIRE DES PLANTES ORCHIDÉES DES ILES AUSTRALES/D'AFRIQUE; PAR AUBERT DU PETIT-THOUARS

Nouv. Bull. Soc. Philom. Paris **1**: 314-320. *1 t.* Apr 1809. (1468, 1516, 1556, 1558, 1565, 1631, 1705, 1834)

HISTOIRE/PARTICULIÈRE/DES PLANTES ORCHIDÉES/RECUEILLIES/SUR LES TROIS ILES AUSTRALES D'AFRIQUE,/DE FRANCE, DE BOURBON ET DE MADAGASCAR; /..../1822/

Hist. Pl. Orch. (1468, 1516, 1558, 1631, 1705, 1834)

One volume, 1822 (1819-1822? see O. Kuntze).

Descriptions of genera already published earlier in Bull. Soc. Philom. Paris **1**: 314-320. Apr 1809. Uninomial specific names (*Volucrepis,* etc.).

Ref.: Kuntze, Rev. Gen. **1**: cxxvii. 1891.
Tourlet, Docum. Hist. Bot. Touraine 7. 1905.

Aublet, Jean Baptiste Christophe Fusée, 1720-1778.

HISTOIRE/DES PLANTES/DE/LA GUIANE FRANÇOISE,/..../
Pl. Guiane (27 references)
1775. In 4 volumes. [vol. 1-2: pp. 1-976, 1-52, 1-160; vol. 3-4: *t. 1*-392].

No information on precise date of publication is available. J. J. Magelhaens wrote to Banks (Letters p. 567) on 8 Oct 1774 stating that the book was to be published in Dec 1774.

Baillon, Henri Ernest, 1827-1895.
(2804, 4331, 4452, 6670, 8162)

Balfour, Sir Isaac Bailey, 1833-1922.
(8200)

Banks, Joseph, 1743-1820.
(6616)

Bartling, Friedrich Gottlieb, 1798-1875.
(8181)

Barton, William Paul Crillon, 1786-1856.

A FLORA OF NORTH AMERICA/..../
Fl. N. Am. (7022)

Vol.	Pages	Plates	Dates
1	1-54	*1- 15*	1820.
	i-xix, 55-138	*16- 36*	1821.
2	1-42	*37- 50*	1821.
	i-x 43-107	*51- 70*	1822 sem. 2.
3	1-40	*71- 85*	1822.
	i-vii, 41-100	*86-106*	1823.

Beadle, Chauncey Delos, 1866.
(9247)

Beauvois, see Palisot de Beauvois.

Beccari, Odoardo, 1843-1920.
(567)

Beer, Johann Georg, 1803-1873.

DIE FAMILIE/DER/BROMELIACEEN. /..../
Bromel. (891)
1857.

Belcher, Edward, 1799-1877.
(9405)

Bennett, John Joseph, see under Brown, Robert.

Bentham, George, 1800-1884.

COMMENTATIONES/DE/ LEGUMINOSARUM GENERIBUS/..../1837/
Comm. Legum. Gen. (3858)
1837.

[Also as "De leguminosarum generibus commentationes" in Ann. Wiener Mus. **2**: 61-142. 1839].

PLANTAS HARTWEGIANAS /..../
Pl. Hartw. (308, 8761)
1839-1857, each signature dated (dates of printing?).

THE/BOTANY/OF/THE VOYAGE OF H.M.S. SULPHUR,/..../
Bot. Voy. Sulphur (8028, 8265)

Part	Pages	Plates	Dates
1	1- 16	*1-10*	16 Jan 1844.
2	17- 48	*11-20*	2 Apr 1844.
3	49- 72	*21-30*	16 Aug 1844.
4	73- 96	*31-40*	25 Oct 1844.
5	97-144	*41-50*	14 Apr 1845.
6	145-194 (+ index)	*51-60*	8 Mai 1846.

The dates are those on which the parts were received by the Linnean Society (see Stearn); they are confirmed by contemporary reviews in Lond. Journ. Bot.

Ref.: Kuntze, Rev. Gen. **3**(2): 154. 1898.
Tucker, Journ. Arnold Arb. **11**: 243. 1930.
Stearn, Fl. Males. **4**(5): clxx. 1954.

FLORA HONGKONGENSIS: /..../1861/
Fl. Hongk. (4470)

FLORA AUSTRALIENSIS:/..../
Fl. Austr. (3998, 4627)
7 volumes, 1863-1878: 1, 30 Mai 1863; 2, 5 Oct 1864; 3, 5 Jan 1867; 4, 16 Dec 1868; 5, not later than Oct 1870; 6, 23 Sep 1873; 7, ante Mar 1878.

Ref.: Marshall, Journ. Soc. Bibliogr. Nat. Hist. **1**: 69-71. 1937.

Bentham, George, 1800-1884; Hooker, Joseph Dalton, 1817-1911.

GENERA PLANTARUM/..../
Gen. Pl. (567, 3589, 3998, 4355, 4627, 6384, 6468, 7808, 8353, 8388, 8397, 8553, 9289)

Vol.	Part	Pages	Dates
1	1	1- 454, v-xii	7 Aug 1862.
	2	433 (sic)- 734	19 Oct 1865.
	3	721 (sic)-1040, v-xv	Sep 1867.
2	1	1- 554	7/9 Apr 1873.
	2	533 (sic)-1279, iii-viii	Mai 1876.
3	1	1- 459, iii-vii	7 Feb 1880.
	2	447 (sic)-1258	14 Apr 1883.

Note duplication of paging for addenda and indices.

Ref.:Stearn, Journ. Soc. Bibliogr. Nat. Hist. **3**: 127. 1956.

Bergius, Karl Heinrich, 1792-1818.
(6045)

Bergius, Petrus Jonas, 1730-1790.

DESCRIPTIONES/PLANTARUM/EX/ CAPITE BONAE SPEI,/..../
Descr. Pl. Cap. (2790, 7517)
Sep 1767.

Dedication dated 25 Aug 1767. Linnaeus received a copy on or before 21 Sep 1767.

Ref.: Sprague, Kew Bull. **1929**: 88.
Stearn, Introduction to facsimile reprint Linnaeus, Mant. (Weinheim 1961).

Bernhardi, Johann Jakob, 1774-1850.

SYSTEMATISCHES VERZEICHNISS.... /....ERFURT..../
Syst. Verzeichn. Pfl. Erfurt 1 (269, 5938, 6018, 6889)
1800, pars 1.

[Not seen - title from Pritzel.]

Bertero, Carlo Giuseppe, 1789-1831.

CONTINUACION DEL CATÁLOGO DE PLANTAS OBSERVADAS EN CHILE/ POR EL DOCTOR BERTERO./
Mercurio Chil. (657)
Mercurio Chil. **16**: 735-749 (15 Jul 1829).

Previous instalments appeared in **12**: 551-564 (1 Mar 1829); **13**: 593-616 (15 Apr); **14**: 639-651 (15 Mai); 684-702 (15 Jun). The title of the series is found on p. 556: LISTA DE LAS PLANTAS/QUE HAN SIDO OBSERVADAS EN CHILE POR EL DR. BERTERO/EN 1828./ This is preceded by an introduction beginning "Señores Editores del Mercurio Chileno." The part in no. 16 ends with the words "(Se concluira.)"
Bertero's Lista was reprinted, with an introduction, by Gualterio Looser in Santiago de Chile, 1933-1936. It was noticed, with a translation into German of the descriptions, by William Samuel Waithman Ruschenberger, Linnaea **7** (Lit.-Ber.): 6-49 (1832).

Bertoloni, Antonio, 1775-1869.

/..../FLORA ITALICA/..../
Fl. Ital. (6318)
10 volumes, 1833-1854 (vol. 2, 1835).

Besser, Wilibald Swibert Joseph Gottlieb, 1784-1842.

ENUMERATIO PLANTARUM HUCUSQUE IN VOLHYNIA, PODOLIA,/..../
Enum. Plant. Volhyn. Podol. (7668)
1822, post 25 Mai (see fiat opposite title page).

Bieberstein, see Marschall von Bieberstein.

Billberg, Gustav Johan, 1772-1844.
(3081)

Binnendijk, Simon, 1821-1883.
(1360, 2793)

Bivona-Bernardi, Antonio, 1774-1837.
(2902)

Blanco, Francisco Manuel, 1778-1845.

FLORA/DE/FILIPINAS./....1837/..../
Fl. Filip. (8227)

FLORA/DE FILIPINAS,/..../SEGUNDA IMPRESION/..../1845./
Fl. Filip. ed. 2. (2793)

Blume, Carl Ludwig, 1796-1862.

BIJDRAGEN/TOT DE/FLORA/VAN/NEDERLANSCH INDIË,/..../
Bijdr. (1500, 1502, 1704, 1822, 2312, 3022, 4089, 4449, 4454, 4820, 5040, 6486, 7809, 8312)

Parts	Pages	Dates
1	1- 42	15 Mar-31 Mai 1825.
2-9	43- 484	1 Jun- 7 Dec 1825.
10-12	485- 636	7 Dec-15 Mar 1826.
13	637- 730	idem
14-15	731- 942	Jul-Dec 1826.
17	943-1169	Oct-Mar 1827.

Ref.: De Wit, Fl. Males. Bull. **1**: 96. 1948.

CATALOGUS/VAN/EENIGE DER MERKWAARDIGSTE/ZOO IN- ALS UITHEEMSCHE/GEWASSEN,/TE VINDEN/IN 'S LANDS PLANTENTUIN TE BUITENZORG./..../
Catal. Buitenzorg (4470)
1823.

Seen in Arnold Arboretum facsimile. Descriptions were reprinted in Flora **8**: 97-160. 1825.

TABELLEN EN PLATEN/VOOR DE/JAVAANSCHE ORCHIDËEN,/..../
Tabell. Jav. Orch. (5676)
First week of Dec 1825; issued with the 6th instalment of the Bijdragen.

Ref.: De Wit, Fl. Males. Bull. **1**: 96. 1948.
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 731. 1960.

FLORA JAVAE/NEC NON/INSULARUM ADJACENTIUM,/..../
Fl. Jav. (1500, 4449)
1828-1858, in 42 (+ 1) parts. See v. Steenis-Kruseman and Stearn for further details and references.

Ref.: v. Steenis-Kruseman and Stearn, Fl. Males, **4**(5): clxxi. 1954.
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 642. 1959, 731. 1960.

MUSEUM BOTANICUM/LUGDUNO-BATAVUM,/..../
Mus. Bot. (4600)
In 2 volumes: 1, 1849-1851; 2, 1856. For precise dates see van Steenis-Kruseman and Stearn.

Ref.: Beumee, Fl. Males. Bull. **1**: 69. 1948.
v. Steenis-Kruseman and Stearn, Fl. Males. **4**(5): clxxii. 1954.
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 732. 1960.

Boehmer, Georg Rudolf, 1723-1803, see Ludwig, Christian Gottlieb.

Bojer, Wenzel, 1797-1856.
(7760)

Bolus, Harry (1834-1911).
(1648)

Bompard, Enrico.
(4516)

Borkhausen, Moriz Balthasar, 1760-1806.

TENTAMEN DISPOSITIONIS PLANTARUM GERMANIAE....*
Tent. Disp. Pl. Germ. (3659)

First issued 1792 (not seen). We consulted the copy in the library of the British Museum (Nat. Hist.) which is dated 1809. In this copy an anonymous annotation: "the first edition is the same as this, but the date is altered here and the dedication is omitted". The 1809 edition is probably the 1792 book with only a new title page. The name is spelled Borkhausen, not Borckhausen.

Brand, August, 1863-1917.
(post 7124)

Braun, Alexander Carl Heinrich, 1805-1877.
(3323)

Breda, Jacques Gisbert Samuel van, 1788-1867.

GENERA ET SPECIES/ORCHIDEARUM/ET/ASCLEPIADEARUM/..../
Gen. Sp. Orch. Ascl. (1704)

Each fascicle contains the descriptions of five species on 10 pages and 5 plates. Pages and plates not numbered.

1: 18 Nov 1828; 2: prob. first half of 1829; 3: 15 Aug 1829.

Ref.: De Wit, Fl. Males. Bull. **1**: 165-167. 1950.

Brickell, John, 1749-1809.
(2656)

Britten, James, 1846-1924.
(5155)

Britton, Nathaniel Lord, 1859-1934; Brown, Addison, 1830-1913.

AN/ILLUSTRATED FLORA/OF THE/NORTHERN UNITED STATES, CANADA/..../SECOND EDITION ..../..../
Ill. Fl. N.U.S. ed. 2 (1494, 2965a, 3745, 3874, 8926)
7 Jun 1913, 3 volumes.

Britton, Nathaniel Lord, 1859-1934; Sterns, Emerson Ellick, 1846-1926; Poggenburg, Justus Ferdinand, 1840-1893.

PRELIMINARY CATALOGUE ....
Prel. Cat. 6501
25 Apr 1888.

Brongniart, Adolphe Théodore, 1801-1876.
(682, 3284, 3285, 4874, 4882, 5585)

Brown, Robert, 1773-1858.

PRODROMUS/FLORAE NOVAE HOLLANDIAE/..../1810./
Prodr. (206, 383, 462, 800, 808, 815, 962, 968, 974, 992, 1032, 1037, 1111, 1449, 6254, 6262p, 6450, 6616, 6994, 7056, 7532, 8227)

Published between 1 and 7 Apr 1810. One volume; no more published. A 'Supplementum primum' was published in 1830.

Ref.: Britten, Journ. Bot. **45**: 247. 1907. Stearn, Introduction to facsimile reprint (Weinheim 1960).

Brown, Robert, 1773-1858; Bennett, John Joseph, 1801-1876.

PLANTAE JAVANICAE/RARIORES,/..../
Pl. Jav. Rar. (4435)

According to the title-page, descriptions by Bennett of plants collected by Horsfield, with additions by Brown.

Part	Pages	Plates	Dates
1	1-104	*1-24*	4- 7 Jul 1838.
2	105-196	*25-40*	Mai 1840.
3	197-238	*41-45*	Nov 1844.
4	239-258 i-xvi, map	*46-50*	8-31 Mai 1852.

Ref.: v. Steenis-Kruseman and Stearn, Fl. Males. **4**(5): clxix. 1954.

Browne, Patrick, 1720-1790.

THE/CIVIL AND NATURAL/HISTORY/OF/JAMAICA./..../.... MDCCLVI./
Hist. Jamaica (48 references)
10 Mar 1756.

New genera mostly validly published because monotypic or because of special (typographic-

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* The absence of line divisions here and elsewhere indicates that we had no occasion to check this title again especially for the bibliography.

ally distinct) descriptions under the first species. No binomials.

Ref.: Hulth (ed.), Bref och Skrifvelser, ser. 2. **1**: 341.
Smith, Corresp. Linnaeus **1**: 39. 1821.

Buchanan-Hamilton, see W. Hamilton.

Buchoz, Pierre Joseph. 1731-1807.

PLANTES/NOUVELLEMENT DECOUVERTES,/..../
Pl. Nouvellem. Découv. (4957, 5759, 7592)
1779.

Burman, Johannes, 1707-1779.

INDEX ALTER/IN/OMNES TOMOS/ HERBARII AMBOINENSIS/..../
Index alter (2750)
1769.

Burman, Nikolaus Laurens, 1734-1793.

..../FLORA INDICA:/..../ MDCCLXVIII./
Fl. Ind. (4137, 6310)
1768 trim. 1 (probably end of March or early April).

Ref.: Hulth et Uggla (ed.), Bref och Skrifvelser ser. 2. **2**: 245 (nos 427, 428).
Stearn, Intr. facsimile edition Linnaeus, Mantissa (Weinheim 1961).

Burtt, Brian L., 1913-x.
(7810)

Caldas, Francisco José De, 1771-1816.
(2163)

Camara, Arruda da, see Arruda da Camara.

Cambessèdes, Jacques, 1799-1863.
(3316, 4730)

Campdera, Francisco,

MONOGRAPHIE/DES RUMEX,/..../1819./
Monogr. Rumex (2194)

Candolle, Alphonse Louis Pierre Pyramus de, 1806-1893 ("A. Decandolle").
(6288)

Candolle, Alphonse Louis Pierre Pyramus de, 1806-1893; Candolle, Anne Casimir Pyramus de, 1836-1918 ("A. et C. Decandolle").

MONOGRAPHIAE/PHANEROGAMARUM /..../
Monogr. Phan. (779, 894, 4915, 7808, 7809)
9 Volumes, 1878-1896 (months of publ. on title pages).

Candolle, Augustin Pyramus de, 1778-1841 ("A. P. Decandolle").

PLANTARUM SUCCULENTARUM HISTORIA./..../
Pl. Hist. Succ. (3171)
1798-1837. Issued in 31 [or 32] parts. For details of publication and dates see Rowley ('a bibliographic nightmare').

Ref.: Stearn, Natl. Cactus Succ. Journ. **7**: 37. 1938.
Rowley, Natl. Cactus Succ. Journ. 1956/7, repr. p. 5.

..../ASTRAGALOGIA/..../ANNO XI.-MDCCCII./
Astragal. (3767)
Nov. 1802.

Two editions, a folio minor and a folio maxima one, with different pagination, each with 50 plates.

Rev.: Journ. Gén. Lit. Fr. **5**: 324. Nov 1802.

CATALOGUS PLANTARUM/HORTI BOTANICI MONSPELIENSIS,/..../1813./
Catal. Monsp. (2412, 3892, 9208)
1813 trim. 1 (Bibl. Fr. 1813: 130. 19 Mar 1813: review).

REGNI VEGETABILIS/SYSTEMA NATURALE,/..../
Syst. (2570, 2679, 2857, 2940, 2989a, 3051)
In 2 volumes: vol. 1 early Nov 1817, vol. 2 late Mai 1821.

Ref.: Stearn, Journ. Bot. **79**: 25. 1941.

Rev.: Bibl. Fr. **1817**: 624. 15 Nov 1817 (vol. 1); 1821: 303. 1 Jun 1821 (vol. 2).

PRODROMUS/SYSTEMATIS NATURALIS/ REGNI VEGETABILIS,/..../....
Prodr. (47 references)
17 Volumes, 1824-1873. For details on dates of publication see Stearn.

Ref.: Kuntze, Rev. Gen. **1**: cxxv. 1891; **3**(2): 154. 1898.
Stearn, Candollea **8**: 1. 1939.
v. Steenis-Kruseman and Stearn, Fl. Males. **4**(5): clxxv. 1954.

MÉMOIRES/SUR LA FAMILLE/DES LÉGUMINEUSES,/..../

Mém. Légum. (3908)

1825-1827, published in 8 parts. For precise details see Stafleu et Stearn.

Ref.: Stafleu et Stearn, Taxon **9**: 170. 1960.

COLLECTION DE MÉMOIRES/POUR SERVIR/A L'HISTOIRE DU RÈGNE VÉGÉTAL./CINQUIÈME MÉMOIRE/ SUR LA/FAMILLE DES OMBELLIFÈRES./

Coll. Mem. 5 [Mem. Fam. Ombellif.] (5964, 6015)

Early Sep 1829 (Bibl. Fr. 12 Sep 1829; Bull. Férussac **19**: 59. Oct 1829). Half-title (p. 1) has 'Observations sur la famille des Ombellifères.'

REVUE SOMMAIRE DE LA FAMILLE DES BIGNONIACÉES

Rev. Bignon. (7668, 7697)

Separately paged reprint from Bibl. Genève, ser. 2. **17**: 117-136. Sep 1838 (reprint not seen).

Carrière, Élie Abel, 1818-1896.
(639)

Cassini, Alexandre Henri Gabriel, 1787-1832.

OPUSCULES/PHYTOLOGIQUES;/..../

Opusc. Phyt. (9405)

Three volumes, 1826-1834; vol. 3, 1834.

Posthumous. Preface dated Dec 1833. Biography of Cassini, i-xxix; ed. by D. de Blainville; Cassini's prefaced "avertissement" dated 9 Mai 1831.

Cavanilles, Antonio José, 1754-1804.

MONADELPHIAE/CLASSIS/DISSERTATIONES DECEM./..../

Diss. 1 (392); diss. 2 (5007, 5053, 7392); diss. 3 (5007)

1, 15 Apr 1785 (vide Cavanilles, Mag. Bot. Römer et Usteri **7**: 65. 1790);

2, 1786 prim. (vide Cavanilles, l.c., and letter Cavanilles to Banks 6 Mai 1786, Banks Letters p. 207, see also Diss. p. 105);

3, Feb 1787 (see letter to Banks 22 Feb 1787, l.c.; see also Diss. p. 188).

The book consists of 10 dissertations; for the dates of publication of numbers 5-10 see Stafleu, Taxon (to be published in 1961). No. 4 was published in 1787 after April (Banks Letters p. 207, letter dated 10 Apr 1787). It is necessary to cite the no. of the dissertations, because the pages are not consecutive, though meant to be, and because of the unnumbered pages. The latter often contain generic descriptions.

ANT. IOSEPHI CAVANILLES/ICONES/ET DESCRIPTIONES PLANTARUM./..../

Ic. (272, 2023, 3558, 3789, 6260, 6262p, 9101, 9147, 9208)

Vol. & Part	Pages	Plates	Dates
1(1)	1-32	*1- 40*	Mai-Aug 1791.
(2)	33-52	*41- 71*	Sep-Nov 1791.
(3)	53-67, ind.	*72-100*	Dec 1791.
2(1)	1-32	*101-139*	post Mar 1793.
(2)	33- ?	*140-170*	post Mar 1793.
(3)	?-79, ind.	*171-200*	post Mar 1793 (Jan 1794?).
3(1)	1-30	*201-260*	1795.
(2)	31-52	*261-300*	1796.
4(1)	1-36	*301-360*	Sep-Dec 1797.
(2)	37-82	*361-400*	14 Mai 1798.
5(1)	1-74	*401-500 bis*	Jun-Sep 1799.
6(1)	1-40	*501-560*	1800.
(2)	41-97	*561-600*	1801.

The above data on the months of publication are provisional only. They are based on contemporary reviews and letters, and notes in the book itself.

Cavolini, Filippo, 1756-1810.

PHVCAGROSTIDVM/THEOPHRASTI/..../ MDCCXCII./

Phucagr. Theophr. Anth. (60)

1792.

Chamisso, Ludolf Adalbert von, 1781-1838.
(1332, 2856, 5990, 7148, 7673, 8365)

Choisy, Jacques Denis, 1799-1859.

CONVOLVULACEAE/ORIENTALES/..../

Convolv. Or. (3863)

Reprinted from Mém. Soc. Phys. Genève **6**: 385-502. 1833, **8**: 43-86 (1834); Ann. Sci. Nat. Bot. ser. 2. **2**: 140-155 (Sep 1834). Reprint dated 1834.

Christmann, Gottlieb Friedrich, 1752-
(4035)

Clarke, Charles Baron, 1832-1906.
(471a)

Colden, Jane, 1724-1759.
(8285)
For dates see Torreya **7**: 21 et seq.

Colla, Luigi Aloysius, 1766-1848.

HORTUS RIPULENSIS/..../.... MDCCCXXIV./..../
Hort. Ripul. (5600)
1824 sem. 2.
Preface dated 1 Jun 1824.
"Appendice I" in Mem. Accad. Sci. Torino **31**: 111-138. 1825 "Lectae die V decembris 1824."
Appendices 2-4 similarly published.

Commerson, Philibert, 1727-1773.
(1108, 4874, 4882, 4899)

Cornelissen, Egide Norbert, 1769-1849.
(8852)

Correa da Serra, José Francisco, 1751-1823.
(4096, 4099, 5018)

Cosson, Ernest Saint-Charles, 1819-1889; Durieu de Maisonneuve, Michel Charles, 1796-1878.
(7306)

Cothenius, Christian Andreas von, 1708-1789.

DISPOSITIO VEGETABILIUM METHODICA.... 1790.
Disp. (1211, 8241)
1790.

Crantz, Heinrich Johann Nepomuk von, 1722-1799.

/..../CLASSIS CRVCIFORMIVM/ EMENDATA/..../MDCCLXIX./
Class. Crucif. Emend. (2956)
1769.

/..../DE/DUABUS DRACONIS ARBORIBUS/BOTANICORUM/..../1768./
Duab. Drac. Arb. Bot. (9322)
1768.

/..../STIRPIVM/AVSTRIACARVM/PARS I./EDITIO ALTERA AVCTA./..../ MDCCLXIX./
Stirp. Austr. ed. 2. (1482)
1769.

Cunningham, Allan, 1791-1839.
(5621)

Curtis, William, 1746-1799.
(4036)

Dahl, Andreas, 1751-1789.

OBSERVATIONES BOTANICAE./..../.... 1787./
Obs. Syst. Linn. (1046)
1787.
Reprint in Mag. Bot. Roemer et Usteri **4**: 20. 1788; original copy consulted at British Museum (Nat. Hist.).

Dalzell, Nicol Alexander, 1817-1878.
(4600)

Danser, Benedictus Hubertus, 1891-1943.
(2074)

Decaisne, Joseph, 1807-1882.

DESCRIPTION/D'UN HERBIER DE L'ILE DE TIMOR,/....
Herb. Timor. (723)
1834. Also published in Nouv. Ann. Mus. Hist. Nat. Paris ser. 3. **3**: 383-501. *t. 16-21.* 1834.

Decandolle, see Candolle.
The name usually appears on title pages as De Candolle or de Candolle, sometimes as Decandolle; at least once as Décandolle!

Delarbre, Antoine, 1724-1841.

FLORE DE LA CI-DEVANT AUVERGNE .... SECONDE ÉDITION.... 1800.
Fl. Auvergne ed. 2. (3947)
Pars 1, pp. [1]-507 (1800); pars 2, pp. [508]-891 (1800).

Delessert, Jules Paul Benjamin, 1773-1847.

ICONES SELECTAE/..../
Ic. (4222, 5311)

Vol.	Pages	Plates	Title page date	Review Bibl. France
1	26	*100*	1820	**1824**: 99. 14 Feb.
2	28	*100*	1822	**1824**: 99. 14 Feb.
3	viii, 70	*100*	1837	**1838**: 83. 17 Feb.
4	iii, 52	*100*	1839	**1840**: 57. 1 Feb.
5	55, ind.	*101*	1846	

For authorship of new taxa see p. iii, iv of vol. 1.

Delile, Alire Raffeneau, 1778-1850.

FLORAE AEGYPTIACAE ILLUSTRATIO ..../

Fl. Égypte (3980, 8668)

1813 sero. - early 1814 prim.

Published in 'Description de l'Égypte .... tome second .... Histoire Naturelle. Mémoires tome II'.

Ref.: Sayre, Dates of publication 1959, p. 44.

Rev.: Journ. Gén. Lit. Fr. 28 Feb 1814.
Gött. Gelehrte Anz. 21 Jul 1819.

Dennstedt, August Wilhelm, 17 -18 .

SCHLÜSSEL/ZUM/HORTUS INDICUS MALABARICUS,/

Schluess. (923, 2103, 4563, 4604, 5729 — inadvertently cited as "Hort. Malab.")

1818 quadrim. 3 (preface dated 1 Sep 1818).

The new names of species in this list are valid only if published under generic names that had been previously validly published. The new generic names are all nomina nuda because it is not allowed under the Code to validate a combined new generic name and specific epithet by reference to a previous publication, i.e. the Hortus Malabaricus.

Desfontaines, René Louiche, 1750-1833.

FLORA ATLANTICA,/..../

Fl. Atl. (320, 7485)

Issued in 9 livraisons from Apr 1798 until Jul 1799. See Stearn for further details on dates of publication. The original title-pages and covers are inaccurate or misleading.

Ref.: Stearn, Journ. Soc. Bibliogr. Nat. Hist. **1**: 145. 1938.

v. Steenis-Kruseman, Fl. Males. Bull. **3**: 734. 1960.

Rev.: Journ. Bot. Schrader **1**: 365 (1799); **2**: 71. (1799).

TABLEAU/DE/L'ECOLE DE BOTANIQUE /..../

Tableau (1901)

ed. 1, 1804, ed. 2, 1815, ed. 3, 1829.

Desrousseaux, Louis Auguste Joseph, 1753-1838.
(5669)

Desvaux, Nicaise Auguste, 1784-1856.
(286, 2988, 3013, 3807, 3810, 6189)

Didrichsen, Didrik Ferdinand, 1814-1887.
(5195)

Don, David, 1799-1841.

PRODROMUS/ FLORÆ NEPALENSIS, /..../MDCCCXXV./

Prodr. Fl. Nepal. (904, 967, 1697, 1822, 7810)

1 Feb 1825.

Stearn concludes 1 Feb 1825 and we have accepted this date for the purposes of this list. It is not entirely clear from his data, however, why he did not put the date at 'late 1824'.

Ref.: Kuntze, Rev. Gen. **1**: cxxvii. 1891.
Stearn, Journ. Arnold Arb. **26**: 168. 1945.

Don, George, 1798-1856.

A/GENERAL HISTORY/OF THE/ DICHLAMYDEOUS PLANTS,/..../

Gen. Hist. (3753, 5600, 6677, 7866)
Often cited as "Gen. Syst." from its other title: "A General System....".

1, 1831, early Aug (1 Aug, fide Bull. Férussac **26**: 260. Sep 1831).

2, 1832, Oct.

3, 1834, between 8 and 15 Nov.

4, 1837, for the greater part; last part (contents unknown) 1838 between 8 Mar and 8 Apr.

Ref.: Stearn, Fl. Males. **4**(5): clxxviii. 1954. Barnhart, manuscript notes at The New York Botanical Garden.

Donati, Vitaliano, 1713-1763.

VITALIANO DONATI/AUSZUG/SEINER/ NATUR-GESCHICHTE/DES/ADRIATISCHEN MEERS/

Auszug Natur-Gesch. Adriat. Meers (6318) 1753; Italian edition published in 1750. Preface to Sesler's Appendix (in which *Vitaliana* is described) is dated 1 Mar 1750.

Drapiez, Pierre Auguste Joseph, 1778-1856.
(post 8473)

Druce, George Claridge, 1850-1932.
(462, 2036, 2066, 2074, 5075, 6450, 7532, 9059)

Duchassaing de Fontbressin, Edouard Placide, 1818-1873.
(4452)

Duhamel du Monceau, Henri Louis, 1700-1781.

TRAITÉ/DES ARBRES/ET/ARBUSTES /..../

Traité Arb. Arbust. (23, 968, 2663, 3722, 3991, 5062)
1755 (tome 1).

DES SEMIS/ET/PLANTATIONS/DES ARBRES,/..../

Sem. Plant. Arb. Add. (5018)
1760.

Dumont de Courset, Georges Louis Marie, 1746-1824.

LE BOTANISTE/CULTIVATEUR,/..../

Bot. Cult. (4615)
Tome 4me, Jul 1802.

Dumortier, Barthélemy Charles Joseph, 1797-1878.

COMMENTATIONES BOTANICAE./..../1823./

Comment. (1283, 7157)
1823 prim.? [preface dated 3 Jul 1822.].

ANALYSE/DES/FAMILLES DES PLANTES,/..../1829./

Anal. Fam. (910)
1829.

Durand, Élie Magloire, 1794-1873.
(1006)

Duval, Henri Auguste, 1777-1814.

PLANTAE/SUCCULENTAE,/IN/HORTO/ALENCONIO./..../1809./

Pl. Succ. Horto Alenc. (1029, 9412)

Ref.: Stearn, Cactus Journ. **7**: 105. 1939 (with facsimile).

Eaton, Amos, 1776-1842.

A/MANUAL OF BOTANY/FOR/THE NORTHERN STATES./..../

Man. Bot. ed. 1 (3858); ed. 3 (1553); ed. 7 (17)

Ed. 1, 1817, Jul (Sayre says 'June', Jul according to Eaton in letters to Torrey, also McAllister p. 175).
2, 1818, Jun (Sayre; Jul according to Barnhart mss. at The New York Botanical Garden).
3, 1822, Apr (letter from Eaton to Torrey, 23 Apr 1822).
4, 1824, post Jan (Appendix dated 1 Feb).
5, 1829, Sep (letter from Torrey to Clinton, 25 Sep 1829).
6, 1833, Mai (letters from Eaton to Steele).
7, 1836, Apr (?) (idem).
8, 1840, Jun (letter from Eaton to Torrey).

The titles of the various editions vary slightly. The eighth is entitled 'North American Botany', under the authorship of Eaton and Wright. All except the first bear the author's name. Merrill and Reeder list the new names of phanerogams in all editions.

Ref.: Letters Eaton to Torrey at The New York Botanical Garden.
McAllister, Amos Eaton 1941.
Merrill and Reeder, Bartonia **24**: 26. 1946.
Sayre, Dates of publications 54, 55. 1959.

Rev.: Rafinesque, Am. Monthly Mag. **1**(6): 429. Oct 1817 (ed. 1).
——, Journ. Phys. Chim. Hist. Nat. Arts **89**: 256. Oct 1819 (ed. 1).
Férussac, Bull. Férussac **27**: 163. Nov 1831 (ed. 5).

Ecklon, Christian Frederik, 1795-1868.

TOPOGRAPHISCHES/VERZEICHNISS/DER/PFLANZENSAMMLUNG/VON/C. F. ECKLON./..../....1827./

Verz. Pfl. (1313)

1827 sem. 2 (preface dated Jul 1827).

Ecklon, Christian Frederik, 1795-1868; Zeyher, Carl Ludwig Philipp, 1799-1858.

ENUMERATIO/PLANTARUM/AFRICAE AUSTRALIS/..../

Enum. (3673, 4627, 6045, 8598)

1: 1-144, Dec 1834 or 1835 prim.
2: 145-288, Jan 1836.
3: 289-400, Apr 1837.

Ref.: Kuntze, Rev. Gen. **1**: cxxvii. 1891.
Marshall, Journ. Soc. Bibliogr. Nat. Hist. **1**: 101. 1937.

Ehret, Georg Dionysius, 1708-1770.

PLANTAE ET PAPILIONES RARIORES DEPICTAE ET AERI INCISAE.

Pl. Papil. Rar. (2663, 7042)

Title from Pritzel; copy at British Museum (Nat. Hist.). Plates dated, 1748-1759.

Ehrhart, Friedrich, 1742-1795.

BEITRÄGE/ZUR/NATURKUNDE,/.....
Beitr. (2432, 2412, 5060)

Vol.	Year	Preface	Probable date of publ.
1	1787	3 Apr	middle of the year.
2	1788	8 Apr	Apr-Mai.
3	1788	10 Mai	Jun-Jul.
4	1789	3 Apr	late in the year.
5	1790	18 Mar	sem. 2.
6	1791	22 Apr	
7	1792	28 Jun	sem. 2.

The first three volumes contain papers that had been published before in local journals, etc. For the purposes of our list we needed the second volume, but we have not yet been able to trace the original publications. Ehrhart himself does not give the references. According to the review of vol. 1 in Rozier's Journ. Phys. **32**(1): 235 (Mar 1788), they were published in the 'Hannoverisches Magazin'. The dates given above are based on reviews in the Allg. Lit. Zeit., Bot. Mag. Roemer et Usteri, and Rozier's Journ. Phys. They are approximate only because more independent references are needed to obtain certainty. For references to reviews etc. see Stafleu, Taxon 10 (to be published, 1961).

Eichwald, Karl Eduard von, 1795-1876.

PLANTARUM/NOVARUM/VEL MINUS COGNITARUM/QUAS/IN ITINERE CASPIO-CAUCASICO/OBSERVAVIT /..../
Pl. Nov. Casp.-Cauc. (5648)

Fasc. 1, pp. 1-18, *t. 1—?* 1831 [Linnaea **7**(Lit.): 62. 1832].

Fasc. 2, pp. 19-42, *t. ?—40.* 1833 [Linnaea **10**(Lit.): 162. 1836].

Elliott, Stephen, 1771-1830.

A SKETCH/OF THE/BOTANY/OF/SOUTH CAROLINA AND GEORGIA./..../
Sketch Bot. S.C. & Ga. (1161, 6200, 8823)
Two volumes, vol. 1, fasc. 1-6, 1818-1821; vol. 2, fasc. 1-6, 1821-1824.

For precise details of dates of publication see Barnhart.

Ref.: Gray, Am. Journ. Sci. **3**: 81, 392. 1877.
Kuntze, Rev. Gen. **1**: cxxviii. 1891.
Sargent, Garden and Forest **7**: 201. 1894.
Barnhart, Bull. Torrey Club **28**: 680. 1901.

Ellis, John, 1710-1776.
(5148, 6410, 8285)

Endlicher, Stephan Ladislaus, 1804-1849.

PRODROMUS/FLORAE NORFOLKICAE /..../1833./
Prodr. Fl. Norfolk. (5446)

GENERA PLANTARUM/..../
Gen. Pl. (542, 657, 894, 923, 3575, 3647, 4470, 4905, 5446, 6251, 7673, 8852)

Published in 18 parts of 80 pages and five supplements, from 1836 to 1850. For precise details on dates of publication see Stearn.

Ref.: Stearn, Journ. Arnold Arb. **28**: 424. 1947.
v. Steenis-Kruseman and Stearn, Fl. Males. **4**(5): clxxxi. 1954.
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 734. 1960.

ENCHIRIDION BOTANICUM/..../1841./
Enchiridion (5446)
1841 (preface dated 1 Mai 1841).

SYNOPSIS/CONIFERARUM/..../1847./
Syn. Conif. (32)
1847 (preface dated 14 Mai 1847).

Engelmann, George, 1809-1884.
(308)

Engler, Heinrich Gustav Adolf, 1844-1930; Prantl, Karl Anton Eugen, 1849-1893.

DIE NATÜRLICHEN/PFLANZEN-FAMILIEN/....
Nat. Pflanzenfam. (4020, 4073, 4195, 4715, 5155, 5400)

In 4 parts containing 23 divisions, with 4 sets of additions to parts 2-4, and index to the whole. For dates of publication see Stearn.

Ref.: Stearn, Fl. Males. **4**(5): clxxxi. 1954.

Fabricius, Philipp Conrad, 1714-1774.

/..../ENVMERATIO/METHODICA/ PLANTARVM/HORTI MEDICI HELMSTADIENSIS/..../
Enum. (320, 383, 748, 962, 1119, 1285, 1980, 2821, 2988, 3042, 3807, 4277, 6018, 7312, 7377, 8265)
ed. 1, 1759.
ed. 2, 1763.
ed. 3, 1776 (posthumous).

The precise dates of publication are unknown. According to O. Kuntze, the names in Adanson, Fam. vol. 2 have priority over those in Fabricius, Enum. ed. 2. This is dubious: Adanson's book appeared in the middle of

the year probably in Aug 1763. It is not cited in Fabricius, Enum., the latest book cited here being Jacquin, Enum. Stirp. Vindob. of Mai 1762. Fabricius cites the Linnean works carefully, but not Sp. Pl. ed. 2 (Sep 1762). It is therefore not impossible that Fabricius antedates Adanson. For the purposes of our list, however, and in the absence of definite proof, we have given priority to Adanson.

Ref.: Kuntze, Rev. Gen. **1**: cxxviii. 1891.
Rothmaler, Repert. Sp. Nov. **53**: 32, 36. 1944.

Fawcett, William, 1851-1926; Rendle, Alfred Barton, 1865-1938.

FLORA OF JAMAICA/..../
Fl. Jam. (3441)

Vol. 1 Dec 1910.
3(1) Dec 1914.
4(2) Jul 1920.
5(3) 24 Jul 1926.
7(5) 25 Jul 1936.

Fischer, Friedrich Ernst Ludwig von, 1782-1854; Meyer, Carl Anton (Andreevich) von, 1795-1855.

INDEX/SEMINUM, QUAE HORTUS BOTANICUS IMPERIALIS/PETROPOLITANUS PRO MUTUA COMMUTATIONE/OFFERT, .../..../
Ind. Sem. Horti. Petrop. (4957, 7592)

1, 1835 Jan (issue dated on p. 42).
2, '1835' soon after 25 Dec 1835, probably Jan 1836.
3, 1837 post Mar.
4, '1837' soon after 23 Dec 1837, probably Jan 1838.
5, '1838' Jan 1839.

The complete series of this Index (of which we enumerate only the first five issues) is very rare. The publication is important because of the many new taxa described in it. Our copies were consulted at the British Museum (Nat. Hist.) and The New York Botanical Garden.

Flörke, Heinrich Gustav, 1764-1835.
(8918)

Forskål, Pehr, 1732-1763.

FLORA/AEGYPTIACO-ARABICA./..../
1775/..../
Fl. Aeg.-Arab. (2317, 2570, 2940, 4627, 7485, 9545)

Ref.: Christensen, Naturforskeren Pehr F., p. 71. 1918.

Forster, Johann Georg Adam, 1754-1794.

FLORULAE/INSULARUM AUSTRALIUM/PRODROMUS/..../
Fl. Ins. Austr. Prodr. (5320)
1786 sem. 2 (preface dated 30 Jun 1786).

Published later than Forster, De plantis esculentis, in which several of the species from the Prodromus were more amply described.

The "M.S.V." in many references stands for Murray, Syst. Veg. ed. 14 (1786).

Ref.: Merrill, Pacif. Sci. **8**(1): 35. 1954.

Rev.: Gött. Gelehrte Anz. **1786**: 1816. 13 Nov 1786.

Forster, Johann Reinhold, 1729-1798; Forster, Johann Georg Adam, 1754-1794.

CHARACTERES/GENERUM/PLANTARUM,/..../
Char. Gen. Pl. (1032, 1248, 1946, 1988, 2068, 2570, 3204, 3584, 3845, 3848, 4079, 5320, 5506, 5852, 6260, 6616, 8916)
1776.

Fougeroux de Bondaroy, Auguste Denis, 1732-1789.
(5053, 7766)

Freire Allemão e Cysneiro, Francisco, 1797-1874.
(660, 8772)

Freycinet, Louis Claude Desaulses de, 1779-1842.

VOYAGE/AUTOUR DU MONDE,/..../..../BOTANIQUE/PAR M. CHARLES GAUDICHAUD, .../..../
Voy. Monde Bot. (1468, 1980, 1987)

Issued in 12 parts, Oct 1826-Mar 1830. For details on dates of publication and contents of the parts see Sherborn and Woodward.

Ref.: Sherborn and Woodward, Ann. Mag. Nat. Hist. ser. 7. **7**: 392. 1901, Journ. Bot. **39**: 206. 1901.
Merrill, Bot. Bibliogr. Isl. Pacif. 128. 1947.

Fries, Elias Magnus, 1794-1878.

SYSTEMA/MYCOLOGICVM,/..../
Syst. Mycol. (5259)
Vol. 1, 1 Jan 1821 (see Article 13, I.C.B.N.). Preface dated 16 Nov 1820.

Ref.: Mycologia **33**: 569. 1941.

Gaertner, Carl Friderich von, 1772-1850.

SUPPLEMENTUM/CARPOLOGIAE/SEU/ CONTINUATI OPERIS/JOSEPHI GAERTNER/DE/FRUCTIBUS ET SEMINIBUS/PLANTARUM/ VOLUMINIS TERTII/..../
Fruct. 3 (7532, 8028)

One volume, published in two parts: pp. 1-128, *t. 181-202* in 1805 (sem. 1) (rev. Journ. Gén. Lit. Etr. an xiii: 395. Mai-Jun 1805; pp. 129-256, *t. 203-225* in 1807).

Gaertner, Joseph, 1732-1791.

/..../DE FRVCTIBVS/ET/SEMINIBVS PLANTARVM/..../
Fruct. (26 references)

Vol. **1** published as a whole, middle or late Dec 1788.

Vol. **2** (1): 1-184. *t. 80-119*, cent. 6-7, Oct-Nov 1790.
(2): 185-352. *t. 120-156*, cent. 8-9, Apr-Jun 1791.
(3): 353-488. *t. 157-180*, cent. 10, 1791 quadrim. 3.
(4): 489-520 + errata, index, 1792 med.

Vol. **3**, see C. F. von Gaertner.

The dating of Gaertner's work is still a problem. The above dates are based on unpublished information from W. T. Stearn and F. A. Stafleu, and on Brizicky's summary in Rhodora **62**: 81 (1960). Brizicky's conclusions are not entirely followed here: from several sources it is clear that volume 1 was available in all probability around the middle of December 1788, although it may be possible still that actual publication took place in January or February 1789. Very probably relatively few complete copies were available in the beginning, but for effective publication at this period the sending out of a few copies would be sufficient.

With regard to the relative dating of the work:

Volume 1 antedates most well known 1789 publications with the possible exception of L'Héritier, Stirpes Novae, fasc. 5, and Sertum Anglicum, fasc. 1, both from Jan 1789.
Volume 2(1) antedates e.g. L'Héritier, Sertum Anglicum, fasc. 2, and Vahl, Symbolae, vol. 1, but is later than Cavanilles, Diss. 9, 10, Jacquin, Collectanea, vol. 3, and Ic. Pl. Rar., vol. 2, fasc. 4, 5.
Volume 2(2) was published more or less at the same time as Schreber, Genera, vol. 2, although there are some indications that Schreber's work was a little later.
Volume 2(3) was later than Schreber's vol. 2, and Lamarck, Tabl. Enc. 1, pp. 1-200, but antedates Gmelin, Systema 2(1).
For further details on the relative dating and on reviews, letters etc. see Stafleu.

Ref.: Rothmaler, Chron. Bot. **5**: 438. 1939.
Burtt, Kew Bull. **1951**: 148.
Brizicky, Rhodora **62**: 81. 1960; Fl. Males. Bull. **3**: 735. 1960.
Stafleu, Taxon (to be published 1961).

Gaertner, Philipp Gottfried, 1754-1825; Meyer, Bernhard, 1767-1836; Scherbius, Johannes, 1769-1813.

OEKONOMISCH-TECHNISCHE/FLORA DER WETTERAU/..../
Fl. Wett. (2965a)
1, 1799; 2, 1800; 3(1), 1801; 3(2), 1803.

Rev.: vol. 2, Allg. Lit. Zeit. 23 Dec 1801.

Gagnepain, François, 1866-1952.
(4918a, post 9604)

Gardner, George, 1812-1849.
(8244)

Gasparrini, Guglielmo, 1804-1866.
(5585)

Gaudichaud-Beaupré, Charles, 1789-1854.
see under Freycinet.
(1980, 1987)

Gay, Jacques Étienne, 1786-1864.
(5075)

Gerard, Louis, 1733-1819.

/..../FLORA/GALLO-PROVINCIALIS, /..../
Fl. Gallo-prov. (944)
Feb-Mar 1761 according to Rothmaler, who gives no evidence, however. The dedication is dated 20 Oct 1760, the title page gives 1761.

Ref.: Rothmaler, Repert. Sp. Nov. **53**: 34. 1944.

Gilg, Ernst Friedrich, 1867-1933.
(post 5467)

Gingins de Lassaraz, Frédéric Charles Jean, 1790-1863.
(8855)

Gleditsch, Johann Gottlieb, 1714-1786.

/..../SYSTEMA/PLANTARUM/A/ STAMINUM SITU./..../

Syst. Pl. (7312)
1764.

Gmelin, Johann Friedrich, 1748-1804.

/..../SYSTEMA/NATURAE/..../

Syst. (28 references)

Botany in Tomus II, published in two parts.

Part 1, pp. 1- 884, 1791, trim. 4, probably Nov.

Part 2, pp. 885-1661, 1792, sem. 2, probably Oct-Nov.

The above dates are based on reviews in the Gött. Gelehrte Anz., the Allg. Lit. Zeit., and the Mon. Rev. London and on letters from Gmelin to Banks. They are still to be treated as provisional.

The title-page of part 2 is a 'half title' only, carrying no date.

Part 1 was published after several of the other important 1791 publications, as Gaertner, Fruct. 2(2) [and perhaps also 2(3)], Schreber, Genera, vol. 2; Swartz, Observationes, Trans. Linn. Soc. vol. 1 etc.

Ref.: Dawson, The Banks Letters 360. 1958.

Gomez Ortega, Casimiro, 1740-1818.

/...../NOVARUM, AUT RARIORUM PLANTARUM/HORTI MATRITENSIS DESCRIPTIONUM/..../

Nov. Rar. Pl. Hort. Matr. Descr. (1923, 3708, 3973, 9285)

Decas	Pages	Plates	Date
1- 4	1- 51	*1- 6*	1797.
5- 6	53- 80	*7-10*	1798.
7- 8	81-108	*11-13*	1798.
9-10	109-138	*14-18*	1800.

Ref.: Unpublished notes by Barnhart at The New York Botanical Garden.

TABULAE BOTANICAE,/..../

Tab. Bot. (3682a, 4501)
1773.
[Title from Pritzel.]

Graham, Robert, 1786-1845.
(7559)

Gray, Asa, 1810-1888.
(955, 3187, 4995)

Gray, Samuel Frederick, 1766-1828.

A/NATURAL ARRANGEMENT/OF/ BRITISH PLANTS,/..../

Nat. Arr. Brit. Pl. (6232, 8039)
Vol. 1. 1821, 10 Sep 1821 (fide Sayre; 1 Nov fide Donk, Rogers).
Vol. 2. 1821.

Ref.: Gray, Kew Bull. **1894**: 77.
Rogers, Mycologia **33**: 568. 1941.
Donk, Taxon **6**: 252. 1957.
Sayre, Dates of Publications 65. 1959.

Griffith, William, 1810-1845.

..../..../NOTULAE AD PLANTAS ASIATICAS./..../

Notul. Pl. Asiat. (1714, 6408)
Vol. 1, 1847; 2,1849; 3, 1851; 4, 1854.

Griffith, William, 1810-1845.
(124)

Gris, Jean Antoine Arthur, 1829-1872.
(5585)

Grisebach, August Heinrich Rudolph, 1814-1879.

SPICILEGIUM/FLORAE RUMELICAE ET BITHYNICAE/..../

Spicil. Fl. Rumel. ["Sicil." by error.] (7649)

1	1	1-160	Jun ?	1843
	2-3	161-407	Dec	1843 vel Jan 1844.
2	4	1-160	Jul ?	1844
	5-6	161-548	Dec	1845 vel Jan 1846.

Ref.: Johnston, Journ. Arnold Arb. **34**: 264. 1953.

Rev.: part 1, Bot. Zeit. 22 Dec 1843; parts 2-3, Bot. Zeit. 22 Mar 1844.

FLORA/OF THE/BRITISH WEST INDIAN ISLANDS./..../

Fl. Brit. W. Ind. (post 7124)

Published in one volume in seven parts, pp. 1-192 in 1859, pp. 193-316 in 1860 (incl. index-322), pp. 317-506 in 1861, pp. 507-789 in 1864 (plus preface dated 26 Jun 1864) (copy in original covers at The New York Botanical Garden).

Ref.: Jackson, Journ. Bot. **30**: 347. 1892.
Kuntze, Rev. Gen. **3**(2): 155. 1898.
Urban, Symb. Antill. **1**: 56. 1898.

CATALOGUS/PLANTARUM CUBENSIUM /..../

Cat. Pl. Cub. (5353)
1866 (preface dated Apr 1866).

Rev.: Bot. Zeit. 18 Jan 1867.

Gronovius, Johan Frederik, 1690-1762.

FLORA/ORIENTALIS/..../..., 1755/
Fl. Or. (2750)
1755 (post Mar).

Ref.: Smith, Corresp. Linnaeus **2**: 483. 1821.

Guettard, Jean Étienne, 1715-1786.

MINERALOGIE DU DAUPHINE
Mém. Mineral. Dauphiné (8296)
2 vols: 1779 (title from Brunet).

Guillemin, Jean Baptiste Antoine, 1796-1842; Perrottet, George Samuel, 1793-1870; Richard, Achille, 1794-1852.

FLORAE/SENEGAMBIAE/TENTAMEN,/
Fl. Seneg. Tent. (3452, 4563)

Part	Pages	Plates	Bibl. Fr.	Published
1	1- 40	*1- 8*	15 Jan 1831	Jan 1831.
2	41- 80	*9-18*	23 Apr 1831	Apr 1831.
3	81-120	*19-28*	9 Jul 1831	Jun-Jul 1831.
4	121-160	*29-38*	8 Oct 1831	Sep 1831.
5	161-200	*39-48*	11 Feb 1832	Jan 1832.
6	201-240	*49-58*	14 Jul 1832	Jun-Jul 1832.
7	241-280	*59-66*	5 Nov 1832	Oct 1832.
8	281-316	*67-72*	27 Apr 1832	Apr 1832.
	index,			
	title, etc.			

Ref.: Barnhart, unpublished notes at The New York Botanical Garden.

Steam, Fl. Males. **4**(5): clxxxv. 1954.

Rev.: (1-8) Bibl. Fr. see above (1-8).
(1-3) Linnaea **1831** (Litt.): 97; (5) **1832** (Litt.): 52.
(1-4) Bull. Férussac **27**: 65. Oct 1831.

Gussone, Giovanni, 1787-1866.

FLORAE SICULAE/SYNOPSIS/..../...../
Fl. Sicul. Syn. (6099)
1843, Feb (vide p. 575; no definite proof).

Haller, Albrecht von, 1708-1777.

ENUMERATIO/PLANTARUM/HORTI REGII ET AGRI GOTTINGENSIS/..../
Enum. (3874)

1753, ante Mai. We consider this book as pre-linnean although we have no strict proof. The preface is dated 6 Dec 1752, as against that of the Species Plantarum 2 Mai 1753. Without evidence to the contrary the earlier date of the preface should be taken as an indication of earlier publication.

..../HISTORIA/STIRPIUM INDIGENARUM/HELVETIAE/..../
Hist. Stirp. Helv. (143, 2956, 2988, 5938)
1768 (preface dated 7 Mar 1768), in three volumes.

Hamilton, Francis (Buchanan), 1762-1829.

A Journey from Madras through the countries of Mysore....
Mysore. (5505)
Three volumes; vol. 3, 1807.

Hamilton, William, 1783-1856.

PRODROMUS/PLANTARUM INDIAE OCCIDENTALIS/..../1825./
Prodr. Pl. Ind. Occid. (5768, 7860)

Hance, Henry Fletcher, 1827-1886.
(5221, post 9604)

Hanstein, Johannes Ludwig Emil Robert von, 1822-1880.
(7866)

Harduino, see Arduino.

Harvey, William Henry, 1811-1866.

THE/GENERA OF SOUTH AFRICAN PLANTS,/...../1838./
Gen. S. Afr. Pl. (7972)

/THESAURUS CAPENSIS:/..../
Thes. Cap. (8039)
Vol. 1: 1859; vol. 2: 1863.

Harvey, William Henry, 1811-1866; Sonder, Otto Wilhelm, 1812-1881.

FLORA CAPENSIS:/..../
Fl. Cap. (3647)
1, Mai (after the 10th) 1860.
2, Oct (after the 15th) 1862.
3, between 24 Feb and Jul 1865.
Continued (vols. 4-7) by William Turner Thiselton-Dyer.

Ref.: Marshall, Journ. Soc. Bibl. Nat. Hist. **1**: 195. 1939.

Hasskarl, Justus Carl, 1811-1894.

CATALOGUS/PLANTARUM IN HORTO BOTANICO/BOGORIENSI/CULTARUM/ALTER/..../
Catal. Alter. (3022)
Oct 1844.

Ref.: Vriese, Tijdschr. Nat. Gesch. **12**: 16. 1945.

Haworth, Adrian Hardy, 1788-1833.

SYNOPSIS/PLANTARUM SUCCULENTARUM,/..../
Syn. Pl. Succ. (1313, 4501, 5411, 9150)
1812.

SUPPLEMENTUM/PLANTARUM SUCCULENTARUM;/..../
Suppl. Pl. Succ. (6889)
Mai 1819.

Ref.: Stearn, Journ. Bot. **76**: 114. 1938.

Hedwig, Romanus Adolf, 1772-1806.

GENERA/PLANTARUM/..../
Gen. Pl. (471b)
Jul 1806.

Rev.: Journ. Gén. Lit. Fr. **1806**(7): 174. Jul 1806.
Mag. Enc. **1806**(5): 185. Sep 1806.

Heim, Frédéric Louis, 1869-
(5221)

Heister, Lorenz, 1653-1758.

LAVRENTII HEISTERI/SYSTEMA/PLANTARVM/..../
Syst. Pl. (4277)
1748.

/..../DESCRIPTIO/NOVI GENERIS PLANTAE..../BRVNSVIGIAE/..../
Brunsvig. (1046, 1047, 1178)
1753.

Herbert, William, 1778-1847.

AN/APPENDIX/..../
Appendix (1178, 1181, 1211)
1821 trim. 4, probably Dec.

Issued as an Appendix to Curtis's Botanical Magazine (vol. 48) as well as to The Botanical Register (vol. 7).

Ref.: Sealy, Kew Bull. **1939**: 66.
Stearn, Journ. Soc. Bibliogr. Nat. Hist. **2**: 375. 1952.

AMARYLLIDACEAE;/..../
Amaryll. (1050, 1211)
1837, ad finem Apr.

Ref.: Stearn, Journ. Soc. Bibliogr. Nat. Hist. **2**: 376, 377. 1952.

Heyne, Benjamin, -1819.

TRACTS, HISTORICAL AND STATISTICAL, ON INDIA....
Tracts on India (9222)
1814 (Copy seen at Linnean Society, London).

Hiern, William Philip, 1839-1925.

CATALOGUE/OF THE/AFRICAN PLANTS/COLLECTED BY/DR. FRIEDRICH WELWITSCH/..../
Cat. Afr. Pl. Welw. (5428)
Two volumes (6 parts), Dec 1896-1901.

Hill, John, 1716-1775.

THE/BRITISH HERBAL:/..../
Brit. Herbal (2528, 7312, 8926)
1756-1758.

Issued in 52 parts beginning 24 Jan 1756 (at 6d a part). There are 52 signatures of 8 or 12 pages and the book must have been published over the years 1756 and 1757, with perhaps some of the last parts in 1758. According to Rothmaler it was published up to part 35 in Sep 1757.

Ref.: Autograph note by John Hill, in the copy of 'The useful Family Herbal', (1754) at the British Museum (Nat. Hist.).
Rothmaler, Repert. Sp. Nov. **53**: 31, 32. 1944.

EXOTIC BOTANY/..../
Exot. Bot. (9155)
1759.

The page numbers are really the numbers of the plates to which the pages correspond. Hence the first page ('Introduction') is numbered "(o)" and the "(1)" is on the verso.

Ref.: Kuntze, Rev. Gen. Pl. **1**: cxxx. 1891.

THE/VEGETABLE SYSTEM:/..../
Veg. Syst. (5353, 7102, 8751, 8826)
26 volumes, 1761-1775; vol. 3, 1761; 4, 1762; 5, 1763.

William J. Dress (in litt.) has informed us that (sub 8826) *Lacinaria* appears on p. 65 of vol. 4, not on p. 49. In the copy at The New York Botanical Garden it is on p. 49, which is the last page (except for the 2 pp. of index) in the volume. Vols. 1 and 2 were reissued; but we have seen no later issue of vol. 4.

Hochstetter, Christian Friedrich, 1787-1860.
(8215)

Hoffmann, Georg Franz, 1761-1826.

/..../GENERA/PLANTARUM/UMBELLIFERARUM/..../
Gen. Umbellif. (3931, 5976, 5998)
ed. 1, 1814 (preface dated 15 Nov 1813).
ed. 2, 1816 (preface dated 15 Mai 1816).

/HORTUS/MOSQUENSIS/..../
Hort. Mosq. (2091)
1808, post 15 Mai (date preface).

Hoffmann, Karl August Otto, 1853-1909.
(4020)

Hoffmannsegg, Johann Centurius von, 1766-1849.

VERZEICHNISS/DER/PFLANZEN-KULTUREN/IN DEN GRÄFL. HOFFMANNSEGGISCHEN/ GÄRTEN/ ZU DRESDEN UND RAMMENAU, /..../
Verz. Pfl. (739)
1824? (preface dated spring 1823).

Hooker, Joseph Dalton, 1817-1911.

THE/FLORA OF BRITISH INDIA./..../
Fl. Brit. India (4516)

In seven volumes, 1872-1897; for dates of publication see Stearn.

Ref.: Stearn, Fl. Males. Bull. **10**: 363. 1953, Fl. Males **4**(5): clxxxvii. 1954.

Hooker, Joseph Dalton, 1817-1911; Thomson, Thomas, 1817-1878.

FLORA INDICA:/..../
Fl. Ind. (2684)
One volume, 1855 (dedication dated Feb 1855).

Hooker, William Jackson, 1785-1865.

EXOTIC FLORA,/..../
Exot. Fl. (1565)

Published in three volumes (38 parts) from Aug 1822 to 1827. For full details see W. T. Stearn's provisional survey which gives data that are all in agreement with Barnhart's unpublished notes on this book at The New York Botanical Garden.

Ref.: Kuntze, Rev. Gen. **1**: cxxx. 1891.
Stearn, Fl. Males. **4**(5): clxxxvii. 1954.

FLORA/BOREALI-AMERICANA:/..../
Fl. Bor.-Am. (3196, 9258)

Vol. & Part	Pages	Plates	Month	Year
1(1)	1- 48	*1- 18*	Sep?	1829.
(2)	49- 96	*19- 38*		1830.
(3)	97-160	*39- 58*		1831.
(4)	161-216	*59- 78*		1832.
(5)	217-272	*79- 98*		1832.
(6)	273-328	*99-118*		1833 sero.
suppl.	329-351	-		1834.
2(7)	1- 48	*119-138*		1834 sero?
(8)	49- 96	*139-158*	Jul	1837.
(9)	97-144	*159-178*	Jul	1838.
(10)	145-192	*179-198*	Dec	1838.
(11)	193-240	*199-218*	Nov	1839.
(12)	241-328	*219-238*	Jul	1840.

Ref.: Jackson, Bull. Herb. Boissier **1**: 298. 1893. Journ. Bot. **47**: 106. 1909.
Sherborn, Journ. Soc. Bibliogr. Nat. Hist. **1**: 197. 1939.
Rickett et Stafleu, in facsimile reprint of Fl. Bor.-Am. (Weinheim, 1960) (N.B. misprint: part 8, 1837, not 1838).

NIGER FLORA;/..../
Niger. Fl. (3516, 5659)
Nov-Dec 1849 (preface dated 1 Nov 1849).

Rev.: Bot. Zeit. 29 Mar 1850.
Bot. Journ. Kew Misc. **1**: 380. 1849 (last fasc., probably Dec).

Hooker, William Jackson, 1785-1865; Arnott, George Arnott Walker, 1799-1868.

THE/BOTANY/OF/CAPTAIN BEECHEY'S VOYAGE;/..../
Bot. Beechey Voy. (9258)

Published in 10 (or 12?) parts, 1830-1841. For a review of the literature see Stearn and van Steenis-Kruseman.

Ref.: Stearn et v. Steenis-Kruseman, Fl. Males. **4**(5): clxxix. 1954.

Hornemann, Jens Wilken, 1770-1841.
(3284)

Hornschuch, Christian Friedrich, 1793-1850, see sub Reinwardt.

Houttuyn, Maarten, 1720-1798.

NATUURLYKE HISTORIE/..../
Nat. Hist. (221, 1331, 1857, 2750, 4035, 6544)

The second part ("Planten") consists of 14 volumes issued 1773-1783. A reprint edition of this second part is mentioned by Merrill: "Handleiding tot de plant en kruidkunde" which differs from the Natuurlyke Historie only in the title pages. The volumes were mostly issued in the same year as the original ones. We have not been able to find a copy of this Handleiding except the one at Kew, mentioned by Merrill.

Ref.: Merrill, Journ. Arnold Arb. **19**: 291. 1938.

Hudson, William, 1730-1793.

/...../FLORA ANGLICA,/..../
Fl. Angl. (944, 6195)
ed. 1, 1762 sem. 1; ed. 2, 1778; ed. 3, 1798.

Ref.: Kuntze, Rev. Gen. Pl. **1**: cxxxi. 1891.
Rothmaler, Repert. Sp. Nov. **53**: 35. 1944.

Rev.: Journ. Enc. Bouillon **1763**(1): 146. 1 Jan 1763.

Humboldt, Friedrich Heinrich Alexander von, 1769-1859; Bonpland, Aimée Jacques Alexandre (Goujaud), 1773-1858; Kunth, Carl Sigismund, 1788-1850.

NOVA GENERA/ET/SPECIES PLANTARUM/..../
Nova Gen. Sp. (2297, 2407, 3328, 3708, 3834, 4226, 4948, 5040, 5149, 6215, 7035, 9168)

Vols. 1-7, published in 36 parts from Jan 1816 to Nov 1825. Folio and quarto editions with separate pagination, issued at the same time except volume 4 of which the entire folio text seems to have been accessible at Paris from 26 Oct 1818. For full details on contents of parts and dates of publication see Barnhart.

Ref.: Kuntze, Rev. Gen. **3**(2): 156. 1898.
Sherborn and Woodward, Journ. Bot. **39**: 203. 1901.
Barnhart, Bull. Torrey Club **29**: 597. 1902; Journ. Bot. **42**: 153. 1904.
Stearn, Taxon **5**: 153. 1956.
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 735. 1960.

Hutchinson, John, 1884-x; Dalziel, John McEwen, 1872-1948.

FLORA/OF/WEST TROPICAL AFRICA /..../
Fl. W. Trop. Afr. (post 8473)

Vol.	Pages	Dates
1(1)	1-246	Mar 1927.
(2)	247-523	Jul 1928.
2(1)	1-292	Mar 1931.
(2)	293-651	Feb 1936.

Jack, William, 1795-1822.

'Descriptions of Malayan Plants', published in 'Malayan Miscellanies', at the Sumatran Mission Press, Bencoolen.
Malay. Misc. (4449, 4578, 8237)
1(1), 1-27. 1820; **1**(5), 1-49. 1820; **2**(7), i-iii, 1-96. 1822.

Only a few copies were distributed, the stock was accidentally burnt in 1824 (copy at British Museum, Bloomsbury, London).

There are several reprints:

repr. 1 in Bot. Misc. Hooker **1**: 273-290, **2**: 60-89. 1830-31.
Journ. Bot. **1**: 358-380. 1834.
Comp. Bot. Mag. **1**: 121-157, 219-224, 253-273. 1835.

repr. 2 in Calcutta Journ. Nat. Hist. (ed. Griffith) **4**: 1-62. (Apr); 159-231 (Jul); 305-374 (Oct 1843).

repr. 3 in Trübner's Oriental Series ser. 2. **1**: 2. 1887.

The order of the descriptions is different in the various reprints; of the Griffith reprint an independently paged edition exists in addition to the reprints bearing the original Calcutta Journ. Nat. Hist. page-numbers.

Ref.: Merrill, Journ. Arnold Arb. **33**: 199. 1952.

Jackson, Benjamin Daydon, 1846-1927.
(5759)

Jackson, George, 1780-1811.
(3597)

Jacquemont, Victor, 1801-1832.

VOYAGE/DANS L'INDE,/..../
Voy. Inde Bot. (3126)

6 Volumes, 1841-1844. Vol. 4, Botanique, Plantae rariores, quas in India orientali collegit V. Jacquemont. Authors: Cambessèdes and Decaisne. There is some evidence that the book was published in parts. Although it is generally assumed that the botanical part of vol. IV was published in 1844, Mr. Zin Ul Abidin has drawn our attention to references to new genera published in this volume by e.g. Endlicher before 1844. These might point to a publication in parts from 1838-39 (pp. 1-24?) to 1844. The 'avis au relieur' also makes it evident that the botanical part was issued in 'livraisons'. On the other hand, Endlicher may have seen only proofs of plates. From the note in Isis it is clear that pp. 1-104 had been published by Oct 1843. See also the remark by v. Steenis-Kruseman (1960).

Ref.: Sherborn et Woodward, Ann. Mag. Nat. Hist. ser. 7. **8**: 334. 1901.
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 642. 1959, 733. 1960.

Rev.: Isis **1843**: 791. Oct 1843.

Jacquin, Nicolaus Josef von, 1727-1817.

/..../ENUMERATIO/SYSTEMATICA/ PLANTARUM,/QUAS/In Insulis Caribaeis ..../..../
Enum. Pl. Carib. (3490, 3524, 3784, 3821, 4150, 4190, 4899, 5271, 7042, 8596, 9192)
1760 post 1 Mai (preface 'Kal. Maji MDCCLX').

Ref.: Rothmaler, Repert. Sp. Nov. **53**: 33. 1944 (gives 15 Mai as date of publication).

..../SELECTARUM STIRPIUM/ AMERICANUM/HISTORIA/..../.
Sel. Stirp. Am. Hist. (1614, 4150, 6304)
Jul 1763 (prob.).

Ref.: Rothmaler, Repert. Sp. Nov. **53**: 32. 1944.

Rev.: Journ. Enc. Bouillon **1763**(5[3]): 144. 1 Aug 1763.
Gött. Gelehrte Anz. **1764**: 743. 2 Aug 1764.

..../OBSERVATIONUM/BOTANICARUM /..../
Obs. Bot. (7393)
Vol. 1, 1764; 2, 1767; 3, 1768; 4, 1771.

Ref.: Kuntze, Rev. Gen. Pl. **1**: cxxxi. 1891.

..../COLLECTANEA/AD/BOTANICAM, CHEMIAM,/ET/HISTORIAM NATURALEM/SPECTANTIA,/..../
Collectanea (3506, 7342)

Vol.		Gött. Gelehrte Anz.	Allg. Litt. Zeit.
1	1787	8 Oct 1787	22 Feb 1790.
2	1789 sem. 1	5 Sep 1789	22 Feb 1790.
3	1790 sem. 1	16 Aug 1790	5 Dec 1790.
4	1791 sero	18 Feb 1792	—.—
5	1796 sero?	—.—	6 Mai 1797.

Ref.: Schubert, Contr. Gray Herb. **154**: 3. 1945.

PLANTARUM RARIORUM/HORTI CAESAREI SCHOENBRUNNENSIS/ DESCRIPTIONES ET ICONES./..../
Hort. Schoenbr. (1018, 4151, 4693)
Vol. 1, 1797; 2, 1797; 3, 1798; 4, 1804.

Jaubert, Hippolyte François, 1798-1874; Spach, Edouard, 1801-1879.

ILLUSTRATIONES/PLANTARUM ORIENTALIUM/..../
Ill. Pl. Orient. (9289)

5 volumes, published in 50 parts from Mar 1842 to Feb 1857.

For full details see Stearn.

Ref.: Stearn, Journ. Soc. Bibliogr. Nat. Hist. **1**: 255. 1939 (repr. Fl. Males. **4**(5): cxci).
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 736. 1960.

Jaume Saint-Hilaire, Jean Henri, 1772-1845.

EXPOSITION/DES/FAMILLES NATURELLES/..../
Expos. Fam. (3953)
Vols. 1(1), 1(2), and 2 all Feb 1805 (rev. Journ. Gén. Lit. Fr. Feb 1805).

Ref.: Sayre, Dates of Publication 24. 1959.

Jussieu, Adrien Henri Laurent de, 1797-1853.

DE/EUPHORBIACEARUM/GENERIBUS /..../TENTAMEN,/....
Euphorb. Gen. Tent. (4355, 4454)
Jan-Feb 1824.

Rev.: Bibl. Fr. **1824**: 127. 21 Feb 1824.

Jussieu, Antoine Laurent de, 1748-1836.

/..../GENERA PLANTARUM/....
Gen. (1108, 1146, 1236, 2124, 2350, 2407, 3709, 3841, 3953, 4077, 4266, 4297, 4899, 8680)
Aug 1789.

Ref.: Kuntze, Rev. Gen. **1**: cxxxi. 1891.
Stafleu, Taxon (to be published 1961).

Jussieu, Bernard de, 1699-1777.
(9405)

Karsten, Gustav Karl Wilhelm Hermann, 1817-1908.
(660)

Ker, John Bellenden, 1764-1842 (Ker Gawler).

IRIDEARUM/GENERA/..../1827./
Irid. Gen. (1284)

Knight, Joseph, 1781-1855.

ON THE CULTIVATION/OF/THE PLANTS/BELONGING TO THE NATURAL ORDER/OF/PROTEEAE, WITH/..../
Cult. Proteeae (2026, 2028, 2035, 2045, 2062, 2063, 2064, 2066, 2069)
Dec 1809.

Preface and frontispiece both dated 1 Aug 1809. This incidentally shows that dates on plates do not necessarily mean dates of publication, since it is unlikely that Knight's preface was dated the day it appeared; they may be taken as "not before" that date.

In the preface, Knight says "Perhaps few works have greater claims to originality than the present, not a single line being copied from any other. For the names only of the different Genera, their various authors are quoted, except those of R. A. Salisbury, whose manuscripts have been found so useful in every sheet." This implies that we have to accept the text as written all by Knight himself, the new names "ex" rather than "in". He does in fact credit Salisb. with many names, equally with R. Br., Banks, L., etc. See, however, the discussion by Stearn (1960).

Ref.: Britten, Journ. Bot. **24**: 296. 1886.
Stearn in R. Brown, Prodr., facsimile edition (Weinheim, 1960).

Koch, Karl (Carl) Heinrich Emil, 1809-1879.

INDEX SEMINUM/IN/HORTO BOTANICO BEROLINENSIS/ANNO 1855 COLLECTORUM/APPENDIX/GENERUM ET SPECIERUM/NOVARUM ET MINUS COGNITARUM,/QUAE/ IN HORTO REGIO BOTANICO BEROLINENSI COLUNTUR./1855./
Ind. Sem. Hort. Berol. (Append.). (779)
1855.

DENDROLOGIE./..../
Dendrol. (6195)
Vol. 1, Jan 1869; 2(1), Dec 1872; 2(2), Nov 1873.

Ref.: Stearn, Journ. Soc. Bibliogr. Nat. Hist. **3**: 175. 1957.

Koch, Wilhelm Daniel Joseph, 1771-1849.
(3682)

Koeler, Georg Ludwig, 1764-1807.

..../DESCRIPTIO/GRAMINUM/IN GALLIA ET GERMANIA/..../1802./
Descr. Gram. Gall. Germ. (272, 282, 374, 5392, 8357)

Koenig, Johann Gerhard, 1728-1785.
(4090)

König, Carl Wilhelm, 1808-1874.
(57, 60, 8031)

Korthals, Peter Wilhelm, 1808-1892.

OBSERVATIONES/DE NAUCLEIS INDICIS/..../
Obs. Naucl. Ind. (8227)
1839.

Kosteletzky, Vincenz Franz, 1801-1887.

ALLGEMEINE/MEDIZINISCH-PHARMAZEUTISCHE/FLORA,/
Allg. Med. Pharm. Fl. (894)
1, 1831 Mai?; 2, 1833; 3, 1834; 4, 1835; 5, 1836; 6, 1836.

Vol. 1 was reviewed in Bull. Férussac **25**: 194 (Mai 1831) but must have been published after April (see p. xvi). The publication of Férussac's Bulletin, however, may have been later than May.

Koster, Henry, 1793-1820.

TRAVELS/IN BRAZIL./BY/HENRY KOSTER./LONDON:/..../1816./
Travels. (5205)

2 Volumes. The appendix (p. 475) contains a partial translation of two dissertations by Manoel Arruda da Camara: (475-489) "A dissertation upon the plants of Brazil from which fibrous substances...." (490-501) "An essay on the utility of establishing gardens ...."

Transl. into French as VOYAGES/DANS LA PARTIE SEPTENTRIONALE/DU BRÉSIL,/..../..../1818/

2 vols. The dissertations of Arruda da Camara occupy **2**: 453-484, 484-510.

Krauss, Christian Ferdinand Friedrich von, 1812-1890.
(3647)

Kunth, Carl Sigismond, 1788-1850.

MALVACEAE, BÜTTNERIACEAE,/ TILIACEAE,/....
Malvac. (5250)
12 Mai 1822 (date on title page).

REVISION/DES/GRAMINEES/....

Published in 44 instalments from Feb 1829 to Mar 1834. Reissued as "Distribution méthodique de la famille des Graminées" (Paris, 1835-1836 or 1837). For details of dates etc. see Sherborn and Woodward. The citation under no 5205, note 1 should be corrected to read: *Platonia* Kunth, Rev. Gram. 139. 14 Nov 1829, 327. 31 Aug 1830.

Ref.: Kuntze, Rev. Gen. **1**: cxxxi. 1891.
Sherborn and Woodward, Journ. Bot. **39**: 205. 1901.
v. Steenis-Kruseman and Stearn, Fl. Males. **4**(5): cxciv. 1954.
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 736. 1960.

(to be continued)

NEWS AND NOTES

VISITING COMMITTEE FOR TROPICAL HERBARIA

In order to provide consultation and advice to tropical herbaria on problems relating to use, care, and housing of their collections, Unesco under its Humid Tropics Programme, has set up a Visiting Committee for Tropical Herbaria. This committee is made up of Prof. H. J. Lam (Leiden), Dr. George Taylor (Kew), Dr. A. C. Smith (Washington), and Dr. F. R. Fosberg, chairman (Washington).

Unesco has taken this step as a start toward strengthening systematic botany in tropical countries, where inadequate knowledge of the floras hinders research in all other fields of biology. Many of the most important tropical botanical institutions are located in newly independent countries where adequately trained personnel and financial resources are often scarce and where the herbaria may not be fully appreciated by the political authorities. The services of the committee members, or of the committee as a whole, will be available at all times to advise and back the administrators of any tropical herbarium in any matter coming within the scope of the committee's competence. It is hoped that in the future, if funds become available, committee members may be able to visit the herbaria in all tropical countries to become better acquainted with their individual problems. Meanwhile inquiries may be made by mail, outlining problems on which advice is needed. Sufficient background information should be provided so that valid suggestions may be made. An information file is being established on facilities, staff, housing, condition of collections, techniques and methods in use, and outstanding needs, at all tropical herbaria. Information for this is earnestly solicited.

A meeting will be held in the near future to consider ways in which the committee may be of active assistance to tropical institutions. Suggestions will be very welcome. Letters should be addressed to Dr. F. R. Fosberg, Pacific Vegetation Project, % National Research Council, Washington 25, D.C., U.S.A.

THE NEW YORK BOTANICAL GARDEN

Dr. Pierre Dansereau, dean of the science faculty and director of the Botanical Institute of the University of Montreal, has been appointed assistant director of The New York Botanical Garden. Dr. Dansereau will join the staff April 1.

FLORA OF THE SOUTHERN RYUKYU ISLANDS

With the financial assistance of a grant from the National Science Foundation Dr. Egbert H. Walker will continue work to complete his Flora of the Southern Ryukyu Islands. The grant will be administered by the Pacific Science Board (National Academy of Sciences-National Research Council) and the work will be done under the auspices of the Pacific Vegetation Project under general supervision of F. R. Fosberg. Space is being generously provided by the U.S. National Arboretum. Specimens and publications pertinent to the Ryukyu area and related regions will be greatly appreciated, either as gifts or loans, and should be addressed to Dr. E. H. Walker, Pacific Vegetation Project, % National Research Council, Washington 25, D.C., U.S.A.

MICRO-EDITION LINNAEAN HERBARIUM

One of the subscribers is interested in acquiring a complete set of enlargements of the Herbarium. This is an expensive undertaking, but one which it is felt is definitely worthwhile, for only a collection of enlarged copies can make the Linnaean Herbarium directly accessible for prolonged and exhaustive study.

Through the use of advanced equipment — designed at the I.D.C. laboratory — the price for roughly 14.000 enlargements can be kept relatively low: about U.S. $ 3,300 for a size of 18 × 24 cm (23 cents per sheet). If additional institutions were interested in purchasing a complete set, the price could be reduced considerably. With 5 subscribers to about $ 2,340, and even lower depending upon the number of subscribers.

Those interested in these enlargements should write to the International Documentation Centre, Hågelby Hus, Tumba, Sweden.

NOTICES OF BOOKS

Early Leyden Botany

Stearn, W. T.: The influence of Leyden on botany in the seventeenth and eighteenth centuries — Lecture delivered at Leyden University, November 11th, 1960, to which

are added the addresses by Dr. C. G. G. J. van Steenis and Dr. W. T. Stearn on the occasion of the Inauguration Ceremony during which the Doctorate honoris causa was awarded by Leyden University to W. T. Stearn earlier on the same day. — Leidse Voordrachten 37 — Universitaire Pers, Leiden, 1961, Dfl. 3.50.

The International Lily Register

Peterson, Giliane (compiler): — The International Lily Register, The Royal Horticultural Society London — 1960, 110 pp.

The Royal Horticultural Society is the officially designated International Registration Authority for the names of *Lilium* cultivars. Rules for drawing up such registers are given in the International Code of Nomenclature of Cultivated Plants. The present list includes all names which have been found in previous indices and publications.

New microfiches

New microfiche editions from the International Documentation Centre AB, Hågelby Hus, Tumba, Sweden:

Bentham, G. & Hooker, J. D.: Genera Plantarum. Vol. 1-3. XV + 1010 p., VIII + 1279 p., XI + 1258 p. London, 1862-1883. 24 cm. ($ 29.00).

Bory de St. Vincent, J. B. G. M.: Voyage avec La Coquille, 1822-25. Abt. Botanique. Cryptogamie. 301 p., 78 planches. Paris, 1826-28. ($ 5.50).

Candolle, A. de & ——, C. de: Monographiae Phanerogamarum. Vol. 1-9. Paris, 1878-96. 24,5 cm. ($ 70.00).

Candolle, A. P., ——, A., ——, C. de: Prodromus systematis naturalis regni vegetabilis. Vol. 1-17, and Index. Paris, 1824-73. 21 cm. ($ 96.00).

Dalla Torre, C. G. de & Harms, H.: Genera Siphonogamarum ad systema Englerianum. VII + 921 p. Lipsiae, 1900. 30,5 cm. ($ 9.50).

Flora capensis: A systematical description of the Plants in Cape Colony, Caffrania and Port Natal. Ed. Harvey, W. H.; Sonder, O.; Thiselton, W. Vol. 1-7. London, 1859-1910. 22 cm. ($ 51.50).

Jacquin, N. J.: Icones Plantarum Rariorum. Vol. 1-3. Vindebonae, 1781-86. 46 cm. ($ 19.00).

Jacquin, N. J.: Plantarum Rariorum horti caesarei Schoenbrunnensis. 4 vols. XII + 70 p., 68, 80, 56 p. 500 pl. Viennae, Londini, 1797. ($ 18.00).

Miller, Ph.: The Gardeners Dictionary. 4th Ed. vols. 1-3. London, 1754. ($ 9.50).

Miller, Ph.: Gardeners Dictionary. Ed. 7 and Ed. 8 in preparation.

Rumphius, G. E.: Herbarium Amboinense. Vols. 1-6. (Incl. Auctarium, Index, Register) 2 Vols. Icones. Amsterdam, 1741-55. 38 cm. ($ 30.00).

Fontinalaceae

Winona H. Welch: A Monograph of the Fontinalaceae. M. Nijhoff, The Hague, 1960. (VII and 357 pages, 35 fig. Dfl. 38.—,)

The rather too small number of taxonomic monographs of Bryophytes is now enlarged by this very important work. The author includes in the family Fontinalaceae the genera Fontinalis, Dichelyma and Brachelyma, whereas Wardia, Hydropogon and Hydropogonella have already previously been dealt with as a separate group. Out of approx. 130 published species names and 90 names of varieties only 27 species and 9 varieties are retained. This shows clearly the very urgent need for monographic treatment. All species are elaborately described, figured and abundantly provided with critical remarks and lists of specimens examined. The book ends with very helpful lists of exsiccati, distribution of species and collector's numbers. Layout and typography of the book are really excellent and make it a pleasure to consult it.

P. A. Florschütz.

Amaranthaceae of C.-Europe

P. Aellen: Die Amaranthaceen Mitteleuropas. This publication forms part of Hegi — Illustrierte Flora von Mitteleuropa, Band III/2, 2nd edition. Many species of this family originally not indigenous to Europe but often introduced are also extensively treated in this work. Carl Hanser Verlag, München, 1961. (72 pp., 49 figs. and photographs, 1 coloured plate; price 20 DM.)

Flora of Java

C. A. Backer: Beknopte flora van Java. This part of Backer's flora of Java (no. XIX) written by Ch. Monod de Froideville deals with the family Poaceae (Gramineae). (228 pp. mimeographed, issued by the Rijksherbarium, Leiden, November 1960. In dutch.)

Identification of European Hardwoods

PÁL GREGUSS: Holzanatomie der Europäischen Laubhölzer und Sträucher (330 pp., ill. with 4 plates and 303 pp. of photographs and drawings, 6 loose tables as an appendix). Publ. by Akadémiai Kiadó, Budapest, 1959).

The present work is a second, enlarged edition of Prof. Greguss's work published in 1945, entitled: „Bestimmung der Mitteleuropäischen Laubhölzer und Sträucher auf xylotomischer Grundlage". In this new edition 50 additional species, mostly from the mediterranean and caucasian regions, have been treated, making a total of 303 species, belonging to 153 genera and 60 families. Among the species treated, undershrubs like Dryas or Bruckenthalia may be found. The author states that though perhaps not all species native or frequently cultivated in Europe have been included, at least all genera are represented.

The text consists of a general and a descriptive part. The former, comprising explanations of techniques and methods, and an amply illustrated glossary of the terms employed and of the general structure of dicotyledonous wood. In the second part we find a set of keys and extensive descriptions for each species, both completely based on microscopic characters. The keys have been arranged in 9 basic groups. It is a pity that no list of these groups has been given at the beginning of the keys; it would have facilitated their use. Likewise one has to be prepared that the keys themselves are not dichotomous.

The treatment of all species is most elaborate, comprising descriptions of the three usual sections of a wood sample, completed with histological details of the various elements. Numbers and dimensions have not been included in the text, but those data may be gathered from very useful, loose, alphabetically arranged lists or they may be deduced by the reader from the illustrations given for each species. Those 303 excellent full-page illustrations comprise half of the volume. Each page contains 4 photographs, two representing cross sections at 30 × and 100 × magnification and a tangential and a radial section 100 × or 180 × magnified; furthermore numerous line drawings of the elements obtained by maceration.

The text is in German, but keys and legends to the plates illustrating the terms of the glossary have been added in the English version.

A. M. W. MENNEGA

Anatomy of the Monocotyledons

C. R. METCALFE: Anatomy of the Monocotyledons, I, Gramineae, Clarendon Press, Oxford, 1960 (lxi + 731 pp., ill.; price in U.K.: £ 4.4.—).

Dr. Metcalfe's book on the anatomy of the Gramineae is the first volume of a planned serial treatment of the anatomy of the Monocotyledons. Volumes devoted to the remaining families treated by himself or other anatomists are to follow.

In this large volume a wealth of information has been collected about the microscopical anatomy of the grasses. The data are for the greater part based on the author's own researches on 206 genera and 413 species, but, with additional information derived from the literature, the total of genera dealt with amounts to 345. Most of the grasses examined have been cultivated at Kew but material collected specially for the purpose overseas or present in the herbarium at Kew has also been used. Botanical identity of all the material was confirmed by the author's collegues at Kew, C. E. Hubbard and N. L. Bor.

In the sections preceding the descriptions the author presents us with a detailed account of the general morphology of the grass plant, and of the diagnostic microscopical characters relatively easy to see and reliable for diagnostic purposes. These characters are chiefly to be found in the epidermis of the lamina and in the different structures seen in a tangential section of the lamina. These structures are illustrated in detail by line drawings. The technique of preparing the material for microscopic inspection is mentioned.

Finally, in a chapter entitled "Leaf structure and taxonomy of the grasses", the writer has given his opinion about the conclusions that may be drawn from his studies of the anatomy and histology of the grasses. Not considering himself an expert on the taxonomy of the Gramineae, he prefers to confine himself to recognizing three large groups and a remaining small group of grasses with mixed panicoid and festucoid characters. The large groups are the Bambuseae, a panicoid group and a festucoid one. The panicoid group proved to be the most homogeneous and it was readily possible to subdivide the group into tribes. In the festucoid group, however, categories based on anatomical characters do not coincide with the taxonomists concept of tribes.

In the descriptive part of the book, covering 585 pages, the genera have been arranged alphabetically, except that the genera in the Bambuseae follow those of the non-Bambuseae. In general, the treatment of each genus consists of diagnostic generic characters, a detailed description of the abaxial epidermis in face view and the tangential section of the lamina, sometimes completed by a description of a cross section of the culm. Those descriptions are given for one or more species belonging to the genus. As well as the citation of the literature pertaining to the genus, additional information from literature has been incorporated, and also a special note on the conclusions which may be drawn from anatomy of the taxa reported on and on relations with other tribes.

The writer did not think it advisable to construct a key to the genera and species as there still remain so many species of which the leaf structure has not yet been examined. Though we may regret this, as a compensation the results of the author's investigation have been summarized in numerous tables, and these will certainly be of much value for purposes of identification.

We have to be grateful to Dr. Metcalfe for the present volume, which forms such a valuable basis for the close co-operation between anatomists and taxonomists necessary to elucidate many problems existing in the systematics of the grasses, but also for scientists working in other fields of botany who have to deal with this family.

A. M. W. Mennega

Aquatic Phycomycetes

F. K. Sparrow: Aquatic Phycomycetes, second revised edition, Univ. Michigan Press, Ann Arbor, 1960 (xxv + 1187 pp., 91 figs.).

This second greatly enlarged edition of Sparrow's study of the aquatic Phycomycetes has the same systematic arrangement as the 1943 edition. It is up to date, well-illustrated and will be indispensable for research workers not only in taxonomical and mycological institutes, but in hydrobiological ones as well. All aquatic Phycomycetes (other than the Saprolegniaceae and the genus Pythium) which are parasitic or saprophytic on lower plants (esp. on algae and water moulds), on pollens or other plant parts, and on animals are extensively described and discussed. The genera of the Saprolegniaceae are classified according to Coker (1923) and Coker and Matthews (1937); taxa described subsequent to these publications are cited, but not described. Only the aquatic Peronosporales are discussed and for the genus Pythium only an annotated key to the species (sensu Middleton, 1943) is given. The approximately 800 species have been divided into 10 orders, 25 families and nearly 150 genera. Descriptions of morphology, development, reproduction, cytology, biology, etc. are given for each order. Keys to orders, families, genera and species are presented, but are not all of the dichotomous type. In the keys to the species of some genera (f.e. in Rhizophydium), the substrate plays an important role. Sometimes only substrate differences are present and many species can not be distinguished on morphological characteristics.

Classification of the aquatic Phycomycetes depends on the number of flagellae of the zoospores, the Uniflagellatae with one flagella and the Biflagellatae with two flagellae. Within the Uniflagellatae the Chytridiales, Blastocladiales and Monoblepharidales, all posteriorly flagellated, form a well defined and natural group. However, many workers will consider the Biflagellatae (sensu Sparrow) a heterogeneous group and would prefer to include the Plasmodiophorales in the Myxomycetes, since they have a plasmodium-like thallus and zoospores with two unequal flagellae of the whip-lash type. The Saprolegniales, Leptomitales, Lagenidales and Peronosporales on the other hand are characterised by zoospores with two flagellae of about the same length, one of the whip-lash, the other of the tinsel type, and by a thallus with real cellwalls.

The book ends with a list of substrata, a bibliography of more than 1200 titles and an index of all fungus names. It is regrettable that the author did not index the wealth of material in this volume in such a way that the uninitiated could make increased use of it.

J. A. von Arx

Moss Flora of Fennoscandia

E. Nyholm: Illustrated moss flora of Fennoscandia, II Musci, fasc. 4. C. W. K. Gleerup, Lund, 1960. (p. 287-408, fig. 163-259, dealing with 17 families, including keys and descriptions.)

Flora of Lincoln County, Wisconsin

F. C. Seymour: Flora of Lincoln County, Wisconsin. An annotated list of flowering plants and ferns with keys and brief descriptions for identification, treating also briefly the adjacent counties. (363 pp., numerous figs. and photographs of plants and vegetation-types, printed in offset, 1960.)

REGNUM VEGETABILE

New issues

Vol. 20. *IX International Botanical Congress, Nomenclature Section,* Report presented by the Bureau of Nomenclature (92 pp., January 1961). Reprinted from Volume 3 of the *Proceedings of the IX International Botanical Congress, Montreal 1959.* Distributed by the International Association for Plant Taxonomy, Utrecht, Netherlands as Regnum Vegetabile vol. 20.
Members of I.A.P.T. (for 1961): free.
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Vol. 21. *Repertorium Plantarum Succulentarum no. X, 1959,* edited by G. D. Rowley (28 pp., February 1961). With an index to numbers I-X.
Members of I.A.P.T. (for 1961): free.
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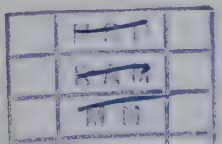
THE MATHEMATICAL ASSESSMENT OF TAXONOMIC SIMILARITY, INCLUDING THE USE OF COMPUTORS

An informal symposium on the above subject was held at the University Botanic Garden, Cambridge, on 6 July, 1960, under the chairmanship of Mr. J. S. L. Gilmour, the Director of the Garden. About thirty-five biologists attended, and, after nearly seven hours, it seemed generally agreed that a fruitful discussion, on a young but growing subject, had taken place.

Professor J. Heslop-Harrison (Birmingham University), opening the symposium, reviewed the history of ideas about discrimination, referring to empirical approaches like that of Anderson's Hybrid Index, and to the more refined biometrical approaches, including Pearson's Coefficient of Racial Likeness, Penrose's technique of discrimination by "size" and "shape", and Fisher's exact method of deriving a discriminant function. He then discussed the application of these methods by non-mathematical systematists, pointing out that they were primarily methods of doing overtly and precisely what a practising systematist does largely by intuition when he assesses the affinities of individuals and groups. He concurred with those who stressed that statistical methods like these did not replace biological judgment in such matters as the selection of characters and the definition of taxa, but merely supplied a more precise basis upon which such judgments could be made.

Dr. R. R. Sokal (University of Kansas) described the various methods that he and Dr. Michener (1957, 1958), and others, have used for the mathematical assessment of taxonomic resemblance. The data for the computation, he said, are most conveniently arranged in matrix form with the columns representing taxonomic entities and the rows characters. The values of character states are coded numerically.

Three kinds of coefficients have been developed to evaluate resemblance. The simplest are the coefficients of association. They are mostly applied when characters occur in two states (+ and —, or 0 and 1) as in microbiology. Such coefficients have been developed in psychology and ecology. They express the percentage of character matches among the total number of characters. The coefficients consequently range from zero to unity. Sneath (1957 A + B) has applied this method with success to the classification of bacteria and several bacteriologists have followed his example.



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The second method of estimating resemblance is through correlation coefficients among taxa. The characters may have any number of states. The coefficients range from —1 to +1, but in practice the lower limit is zero. Sokal and Michener have employed this technique to a study of bees.

The third method determines the resemblance between taxa as the distance between them in an *n*-dimensional space, whose coordinates are the characters. The distance can be computed by means of a simple formula from analytical geometry. The square of the distance is to be preferred. When the states of the character have previously been standardized, the squared distance approaches Pearson's coefficient of racial likeness, which was developed for physical anthropology. Cain and Harrison have suggested a similar technique to which certain statistical objections can be raised.

Dr. P. H. A. Sneath (National Institute for Medical Research, Mill Hill, London) discussed the conceptual basis for natural taxonomic groups. He emphasized that systematists start with specimens and group them into taxa according to their overall similarity. The latter is an intuitive concept which systematists are now trying to express in mathematical terms. The formal logical properties of natural taxa have been little studied, apart from the pioneer work of Gilmour in 1937; natural taxonomies are "general" classifications intended for "general" purposes, in which the organisms are so arranged that the taxa possess the maximum information content. To avoid philosophical difficulties, natural taxonomies are considered as being intended for general scientific use and as being based upon large numbers of attributes which are inherent in the organisms themselves. Each attribute receives equal weight, as taught by Adanson, and in theory no given attribute is necessarily possessed by every member of a taxon (though in practice some attributes generally are). Considerations such as these lead to overlapping taxonomic groups which are ill-suited to the conventional non-overlapping hierarchic systems of taxonomy; this therefore raises the question of whether non-overlapping systems can adequately serve the needs of systematics in the future.

Dr. A. J. Cain (Department of Zoology and Comparative Anatomy, Oxford) discussed the relations between the 'natural' (or phenetic) and the phyletic classification. Over much of the Animal Kingdom, only a natural classification is possible, and the simplest hypothesis would be that this is also a phyletic one. But many examples of convergence are now coming to light, and it is realised that stocks which are already closely related are more capable of convergence, if the opportunity arises, than distantly related ones. Consequently, unless a really good fossil record is available, a natural classification can be taken as a phyletic one only with great reservations. He emphasised that the basis for a natural classification is entirely the characters available. In the past, classifications have been distorted by the introduction of various sorts of "principles", logical, physiological, or phyletic, and now it seems likely that untenable genetical considerations will be brought in. Genetical characters, in a natural classification, are merely one more sort of character.

Mr. R. Crawshay-Williams (Castle Yard, Portmeirion, Penrhyndeudraeth, Wales) pointed out that the correctness of a judgment of similarity depends upon a double criterion: that is, not only upon the objective facts about the properties or features of the objects compared, but also upon the purpose for which the comparison is being made. This double criterion applies not only to judgments of taxonomic similarity, and to classification in general, but also to such subsidiary judgments as whether two features are comparable and what, in any case, is to be 'counted' as a feature.

It follows that no judgment of taxonomic similarity can be entirely pure and objective in the traditional sense if it is to have informative value. The question therefore arises what information is (or should be) conveyed by judgments of taxonomic similarity. We have to reject the traditional view that an objective classification will reflect 'natural' phylogenetic relationships; and it also appears that, mainly owing to evolutionary convergence, too little is in any case known of phylogeny for it to provide a firm criterion for classification. He therefore suggested that the criterion to be adopted (i.e. the acknowledged primary purpose of taxonomic classification) should be that of the general convenience of the scientist in his laboratory or other work-place, especially as, in the case of micro-organisms, the choice of what is to be observed *qua* feature is already largely decided according to this criterion; that is, according to the research interests of the scientist and to the equipment and techniques available to him.

Dr. G. A. Maccacaro (Institute of Microbiology, University of Milan) pointed out that, whatever is the method adopted, one does not classify individuals but one's knowledge of individuals. This knowledge is obtained as answers to a series of tests. Some tests can give more information than others, both of the individuals and of the other tests. The measure of this information is the central part of our method and it is defined as a function of the partition into subsets so that any single test or any group of tests operates inside the set of objects to be classified. This function is called "repartment".

According to their capacity of "repartment" the tests (or the properties to which they relate) can be ordered in a sequence. The branched sequence of tests arranged according to their capacity of giving a maximum repartment, each one inside the subset defined by the preceeding test, is called a *key*. The result of the application of a key is to minimize the number of disjunctive propositions still necessary, after any property has been specified, to individuate an object of the set. In other words, a key obtained in this way yields the *identification* of the objects using the least number of operations.

Another quantity, the "relative order", is defined as a function of the information given by a test on any other group of tests, divided by the information content of such groups. It is a measure of the order existing in the subsets separated by the test, relative to any other property. The branched sequence of tests arranged according to their "relative order" is called a *classification*. The result of a classification is to maximize the number of deductive propositions which can be formulated, after any property has been specified, on properties still to be specified. In other words a classification yields a *system of ordered groups*.

It goes without saying that the underlying assumption of the method is that all tests are initially considered as of equal importance and should be applied to all the objects belonging to the set to be classified.

Dr. J. A. Barnett (Low Temperature Station, Cambridge) dealt with the application of quantitative methods to the classification of micro-organisms. He quoted Buffon who said that groups like families and classes are only in our minds, and that it is individuals which are the realities. Thus, for micro-organisms, it is best to think of taxa as entirely artificial, merely for convenience, and with no "absolute reality" outside people's ideas. Following Heslop-Harrison, he liked to think of the Sneath-Sokal techniques in terms of decision-making machines, allotting strains of micro-organisms to already existing species, genera, and so forth, or alternatively, inventing new convenient groups for the strains. Classifications given by these methods must depend on sets of characteristics which are used, so that changing the range of

tests employed for identification may mean altering the classification itself. Such a quantitative analysis must be thought of simply as a *pis aller*, which we may use when in a state of great ignorance about the organisms to be classified. It does not necessarily inform us about phylogenetic relationships, but provides an arbitrary classification dependent in character upon the kinds of techniques used to study the organisms. This is not to decry Sneath's techniques, which may be extremely useful; it is merely to draw attention to an aspect of their limitations and to suggest that Sneath and Sokal are over-optimistic about what they can do.

Dr. A. F. Parker-Rhodes (Cambridge Language Research Unit) pointed out that there is evidence from mathematical work that differing definitions of what makes a worthwhile group, as judged from a given structural matrix, are likely to yield a very similar classification. This is a reason to expect that mathematical techniques may prove less revolutionary than some fear. Also, in many cases, these techniques will yield ineradicably overlapping groups; if taxonomists want to use these methods, they must therefore be prepared to modify, at least for this special purpose, the nomenclatorial expression of the classification.

Mr. R. H. Richens (Commonwealth Bureau of Plant Breeding and Genetics, Cambridge) stated that recent research on the cytogenetics of many grasses provides an example where study of a new set of characteristics has overturned a pre-existing taxonomic scheme based on morphological characteristics at both the specific and generic levels. It would be mistaken to adopt the distinction between "real" individuals and "conceptual" taxa. Criticisms levelled at the "reality" of taxa can be easily extended to the biological individual. The concept of individuality is also difficult to apply in large vegetatively reproduced clones and to virus-infected clonal stocks.

Since taxonomy aims at describing the variation encountered in organisms, it is not sufficient to adopt a mathematical treatment involving only groups and the distance between them. If individuals are represented as points in a taxonomic hyperspace, the points will frequently aggregate into bodies of distinctive shape, which requires mathematical characterization.

Dr. S. M. Walters (The Botany School, Cambridge) opened a general discussion, during which the following were some of the points made by various speakers:

In assessing the value of mathematical techniques, it is essential to view them against a background of the *purpose* in making the classification. One of the main dangers is that they may become to be regarded as an end in themselves, rather than as a tool for constructing classifications for specifically defined purposes; another related danger it that the time and expense involved in obtaining a more accurate mathematical assessment of character correlation may not be worth while from the point of view of the purpose for which the classification is going to be used. On the other hand, one advantage may be that, in groups with many competing classifications, none generally accepted, a "mathematical classification" may be more readily accepted than any of the existing rival ones.

Several speakers drew attention to the subjective element inevitably injected into techniques for mathematical assessment by the fact that a *selection* of characters on which to operate must be made at the start; in addition, the difficulty of deciding whether a certain attribute should be regarded as one, or more than one, unit character was also stressed.

The suggestion was made that one potential use of an accurate assessment of resemblance would be in studies of the degree of differentiation attained during the course of evolution of a particular group.

Taking the Symposium as a whole, though many diverse views were expressed, great interest was shown in these mathematical techniques as applied to taxonomy, and the feeling emerged that, despite certain dangers and pitfalls, their future development should be encouraged.

References

Gilmour, J. S. L. (1937). A Taxonomic Problem. *Nature,* **139**: 1040.

Sneath, P. H. A. (1957A). Some Thoughts on Bacterial Classification. *Journ. Gen. Microbiol.* **17**: 184.

Sneath, P. H. A. (1957B). The Application of Computors to Taxonomy. *Journ. Gen. Microbiol.* **17**: 201.

Michener, C. D., and Sokal, R. R. (1957). A Quantitative Approach to a Problem in Classification. *Evolution* **11**: 130.

Sokal, R. R., and Michener, C. D. (1958). A Statistical Method for Evaluating Systematic Relationships. *Univ. Kansas Sci. Bull.* **38**: 1409.

NOTES ON ASIATIC ORCHIDS III*

P. F. Hunt and V. S. Summerhayes (Kew)

1. Ephemerantha, a new generic name in the Dendrobiinae

In the course of preparing a new edition of the Kew Orchid Handlist it became necessary to publish a combination which had not previously been made in the genus *Desmotrichum.* As a result of an important discovery during this work the following account becomes necessary. The orchid genus *Desmotrichum* was established by Blume so long ago as 1825 but many orchidologists have considered it to be conspecific with or merely a section of *Dendrobium,* and it appears as such in Bentham and Hooker, Genera Plantarum (3: 498. 1883) and in Pfitzer's account of the family in Engler and Prantl, Die Natürlichen Pflanzenfamilien (II. 6: 173, 175. 1889). Schlechter and J. J. Smith also considered the genus as conspecific with *Dendrobium.* On the other hand, in his treatment of the group in Engler's Das Pflanzenreich (Orch.-Dendrob. 1: 343-358. 1910) Kraenzlin restored the genus as distinct from *Dendrobium.* As a result of the general rejection of Blume's genus there was apparently no opposition, or perhaps orchidologists were unaware of the proposal, when the name *Desmotrichum* Kützing (*Phaeophyta*) was proposed for conservation at Stockholm in 1950. The earlier *Desmotrichum* Bl. was admittedly not included in the list of nomina rejicienda at that time, but was added subsequently and is included in the 1956 edition of the International Code. Blume's name is therefore illegitimate and cannot be used for the orchid genus.

As we consider that the genus is well distinguished from *Dendrobium,* on account of the vegetative characters and the structure and fugaciousness of the flowers, we propose the new name *Ephemerantha* in allusion to the last named feature [1]). We give herewith a list of all the species known to us which are referable to the genus, though further research may show that some of these are conspecific. Some of these have never been placed formally in *Desmotrichum* Bl. though referred to *Dendrobium* sect. *Desmotrichum* by their authors. It seems most suitable to select *Desmotrichum angulatum* Bl. as the lectotype of the generic name

*) Continued from Kew Bulletin 13: 268. (1957).

[1]) After this paper had gone to the press we received at Kew a copy of a number of the "Orchid Weekly" in which A. D. Hawkes substitutes the name *Flickingeria* for *Desmotrichum* Bl. Unfortunately this paper is mimeographed and therefore does not comply with the terms of Article 29 of the International Code of Botanical Nomenclature. It is consequently not effectively published and the names therein are not valid.

Desmotrichum and consequently of the new name *Ephemerantha*. This species is illustrated by Blume and belongs to his first section, which is clearly the typical section; apart from *D. pusillum* Bl. all the other species in the second section are now referred to the genus *Epigeneium*, while *D. pusillum* is a true *Dendrobium*.

Ephemerantha *P. F. Hunt et Summerhayes*, nom. nov.

Desmotrichum Blume, Bijdr. 329 (1825) quoad sect. pseudobulbis monophyllis, nom. rejic., non Kützing (1845).

Species lectotypica: *E. angulata* (Blume) P. F. Hunt et Summerh.

Enumeration of species

1. **Ephemerantha agamensis** (*J. J. Sm.*) *P. F. Hunt et Summerhayes*, comb. nov.

Dendrobium agamense J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 8: 50 (1926).

Distribution: Sumatra.

2. **Ephemerantha amesiana** (*Schltr.*) *P. F. Hunt et Summerhayes*, comb. nov.

Dendrobium amesianum Schltr. in Engl. Bot. Jahrb. 45: 468 (1921).

Distribution: Caroline Islands.

3. **Ephemerantha angustifolia** (*Bl.*) *P. F. Hunt et Summerhayes*, comb. nov.

Desmotrichum angustifolium Bl. Bijdr. 330 (1825).

Dendrobium angustifolium (Bl.) Lindl. Gen. & Sp. Orch. Pl. 76 (1830).

Callista angustifolia (Bl.) Kuntze, Rev. Gen. Pl. 654 (1891).

Distribution: Java, Sumatra.

4. **Ephemerantha angulata** (*Bl.*) *P. F. Hunt et Summerhayes*, comb. nov.

Desmotrichum angulatum Bl. Bijdr. 329 (1825).

Dendrobium angulatum (Bl.) Lindl. Gen. & Sp. Orch. Pl. 76, non 88 (1830).

Dendrobium homonymum Steud. Nom. Bot. ed. 2. 1: 490 (1840).

Dendrobium hasseltii Rchb. f. in Xen. Orch. 2: 23, *t. 109* (1862) non (Bl.) Lindl. (1830).

Callista commutata Kuntze, Rev. Gen. Pl. 2. 653 (1891).

Callista angulata (Bl.) Kuntze, Rev. Gen. Pl. 654, non 653 (1891).

Desmotrichum pristichilum Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 348 (1910).

Distribution: Java.

As mentioned in the introduction we consider this to be the type of the generic names *Desmotrichum* Blume and *Ephemerantha* P. F. Hunt et Summerh.

5. **Ephemerantha annamensis** (*A. D. Hawkes*) *P. F. Hunt et Summerhayes*, comb. nov.

Desmotrichum forcipatum Gagnep. in Bull. Mus. Hist. Nat. Paris, sér. 2. 22: 399 (1950), non Kraenzl. (1910).

Desmotrichum annamense A. D. Hawkes in Lloydia 20: 125 (1957).

Distribution: Annam.

6. **Ephemerantha appendiculata** (*Bl.*) *P. F. Hunt et Summerhayes*, comb. nov.

Desmotrichum appendiculatum Bl. Bijdr. 330 (1825).

Dendrobium appendiculatum (Bl.) Lindl. Gen. & Sp. Orch. Pl. 76 (1830).

Dendrobium fugax Rchb. f. in Gard. Chron. 1257 (1871).

Callista appendiculata (Bl.) Kuntze, Rev. Gen. Pl. 654 (1891).

Distribution: Java.

7. **Ephemerantha aureiloba** (*J. J. Sm.*) *P. F. Hunt et Summerhayes*, comb. nov.

Dendrobium aureilobum J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 3: 285 (1921).

Distribution: Java, Sumatra.

8. **Ephemerantha bicarinata** (*Ames et C. Schweinf.*) *P. F. Hunt et Summerhayes*, comb. nov.

Dendrobium bicarinatum Ames et C. Schweinf. in Ames, Orchid. 6: 98 (1920).

Desmotrichum bicarinatum (Ames et C. Schweinf.) A. D. Hawkes in Lloydia, 20: 125 (1957).

Distribution: Borneo.

9. **Ephemerantha bicostata** (*J. J. Sm.*) *P. F. Hunt et Summerhayes*, comb. nov.

Dendrobium bicostatum J. J. Sm. in Ic. Bogor. 3: *t. 309* (1906).

Desmotrichum bicostatum (J. J. Sm.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 353 (1910).

Distribution: Borneo.

10. **Ephemerantha bifida** (*Ridl.*) *P. F. Hunt et Summerhayes*, comb. nov.

Dendrobium bifidum Ridl. in Journ. As. Soc. Straits, 39: 73 (1896).

Desmotrichum bifidum (Ridl.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 357 (1910).

Dendrobium cystopoides J. J. Sm. in Fedde, Repert. Spec. Nov. 29: 249 (1931).

Distribution: Malay Peninsula.

11. **Ephemerantha calopogon** (*Rchb. f.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium calopogon Rchb. f. Xen. Orch. 2: 23 (1862).
Callista calopogon (Rchb. f.) Kuntze, Rev. Gen. Pl. 654 (1891).
Desmotrichum calopogon (Rchb. f.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 346 (1910).
Distribution: Java.

12. **Ephemerantha chrysographota** (*Ames*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium chrysographotum Ames, Orchid. 5: 119 (1915).
Distribution: Philippines.

13. **Ephemerantha celebensis** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium celebense J. J. Sm. in Bull. Dép. Agric. Ind. Néerl. 45: 15 (1911).
Distribution: Celebes.

14. **Ephemerantha comata** (*Bl.*) *P. F. Hunt et Summerhayes,* comb. nov.
Desmotrichum comatum Bl. Bijdr. 330 (1825).
Dendrobium comatum (Bl.) Lindl. Gen. & Sp. Orch. Pl. 76 (1830).
Distribution: New Guinea.

15. **Ephemerantha comata** var. **papuana** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium comatum var. *papuanum* J. J. Sm. in Nova Guinea, 8: 551 (1911).
Distribution: New Guinea.

16. **Ephemerantha convexa** (*Bl.*) *P. F. Hunt et Summerhayes,* comb. nov.
Desmotrichum convexum Bl. Bijdr. 331 (1825).
Dendrobium convexum (Bl.) Lindl. Gen. & Sp. Orch. Pl. 76 (1830).
Callista convexa (Bl.) Kuntze, Rev. Gen. Pl. 654 (1891).
Dendrobium sordidum King et Pantl. in Journ. As. Soc. Bengal, 69: 583 (1897).
Distribution: Burma.

17. **Ephemerantha crenicristata** (*Ridl.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium crenicristatum Ridl. in Journ. As. Soc. Straits, 54: 48 (1910).
Distribution: Borneo.

18. **Ephemerantha crinifera** (*Lindl.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium criniferum Lindl. in Bot. Reg. 30: misc. 41 (1844).
Dendrobium zollingerianum Teysm. et Binnend. in Tijdschr. Ned. Ind. 24: 313 (1862).
Desmotrichum criniferum (Lindl.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 348 (1910).
Distribution: Java.

19. **Ephemerantha denigrata** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium denigratum J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 2: 60 (1920).
Distribution: Borneo.

20. **Ephemerantha dimorpha** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium dimorphum J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 11: 75 (1930).
Distribution: Moluccas.

21. **Ephemerantha dura** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium durum J. J. Sm. Fl. Buitenz. 6: 321 (1905).
Desmotrichum durum (J. J. Sm.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 351 (1910).
Distribution: Java.

22. **Ephemerantha eurorum** (*Ames*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium eurorum Ames, Orchid. 5: 124 (1913).
Desmotrichum eurorum (Ames) A. D. Hawkes in Lloydia, 20: 125 (1957).
Distribution: Philippines.

23. **Ephemerantha fimbriata** (*Bl.*) *P. F. Hunt et Summerhayes,* comb. nov.
Desmotrichum fimbriatum Bl. Bijdr. 329 (1825).
Dendrobium fimbriatum (Bl.) Lindl. Gen. & Sp. Orch. Pl. 76 (1830).
Dendrobium plicata Lindl. in Bot. Reg. 26: misc. 10 (1840).
Dendrobium insulare Steud. Nomencl. Bot. ed. 2. 1: 490 (1841).
Dendrobium nodosum Dalz. in Hook. Kew Journ. Bot. 4: 292 (1852).
Dendrobium flabellum Rchb. f. in Bonplandia, 5: 56 (1857).
Dendrobium rabani Lindl. in Journ. Linn. Soc. Bot. 3: 7 (1859).
Dendrobium binnendijkii Rchb. f. Xen. Orch. 2: 74 (1865).
Dendrobium pardalinum Rchb. f. in Gard. Chron. 24: 230 (1885).
Dendrobium roseo-punctatum Ridl. in Journ. Linn. Soc. Bot. 32: 240 (1896).

Desmotrichum binnendijkii (Rchb. f.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 353 (1910).

Desmotrichum roseo-punctatum (Ridl.) Ridl. Fl. Mal. Penins. 4: 31 (1924).

Distribution: Malaysia.

Kraenzlin considers that the above concepts are conspecific but he also includes Himalayan species that we think are distinct.

24. **Ephemerantha fimbriatolabella** (*Hayata*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium fimbriatolabellum Hayata, Ic. Pl. Formos. 4: 38 (1914).

Distribution: Formosa.

The combination *Desmotrichum fimbriatolabellum* was made only in synonymy and is therefore not validly published.

25. **Ephemerantha flabelliformis** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium flabelliforme Schltr. in Fedde Repert. Spec. Nov. Beih. 1: 454 (1912).

Desmotrichum flabelliforme (Schltr.) A. D. Hawkes in Lloydia, 20: 125 (1957).

Distribution: New Guinea.

26. **Ephemerantha flabelloides** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium flabelloides J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 2: 58 (1920).

Distribution: Borneo.

27. **Ephemerantha forcipata** (*Kraenzl.*) *P. F. Hunt et Summerhayes,* comb. nov.

Desmotrichum forcipatum Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 357 (1910), *non* Gagnep. (1950).

Dendrobium padangense Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104: 28 (1911).

Desmotrichum compressibulbum Carr in Gard. Bull. Straits Settlements, 7: 7 (1932).

Desmotrichum padangense (Schltr.) A. D. Hawkes in Lloydia, 20: 126 (1957).

Distribution: Malay Peninsula.

28. **Ephemerantha grandiflora** (*Bl.*) *P. F. Hunt et Summerhayes,* comb. nov.

Desmotrichum grandiflorum Bl. Bijdr. 331 (1825).

Dendrobium grandiflorum (Bl.) Lindl. Gen. & Sp. Orch. Pl. 77 (1830).

Distribution: Java.

29. **Ephemerantha guttenbergii** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium guttenbergii J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 12: 133 (1932).

Distribution: Sumatra.

30. **Ephemerantha heterobulba** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium heterobulbum Schltr. in Fedde, Repert. Spec. Nov. 8: 501 (1910).

Distribution: Celebes.

31. **Ephemerantha homoglossa** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium homoglossum Schltr. in Fedde, Repert. Spec. Nov. Beih. 1: 456 (1912).

Desmotrichum homoglossum (Schltr.) A. D. Hawkes in Lloydia, 20: 126 (1957).

Distribution: New Guinea.

32. **Ephemerantha integrilabia** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium integrilabium J. J. Sm. in Ic. Bogor. 2: 91 (1903).

Desmotrichum integrilabium (J. J. Sm.) A. D. Hawkes in Lloydia, 20: 126 (1957).

Distribution: Java.

33. **Ephemerantha interjecta** (*Ames*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium interjectum Ames, Orchid. 5: 125 (1915).

Desmotrichum interjectum (Ames) A. D. Hawkes in Lloydia, 20: 126 (1957).

Distribution: Philippines.

34. **Ephemerantha kelsallii** (*Ridl.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium kelsallii Ridl. in Journ. Linn. Soc. Bot. 32: 237 (1896).

Dendrobium ardenii Ridl. in Journ. As. Soc. Straits, 1: 132 (1908).

Dendrobium bancanum J. J. Sm. in Bull. Dép. Agric. Ind. Néerl. 22: 23 (1909).

Desmotrichum bancanum (J. J. Sm.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 352 (1910).

Desmotrichum ardenii (Ridl.) Ridl. Fl. Mal. Penins. 4: 30 (1924).

Desmotrichum kelsallii (Ridl.) Ridl. *l.c.* (1924).

Distribution: Malay Peninsula and Sumatra.

35. **Ephemerantha kunstleri** (*Hook. f.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium kunstleri Hook. f. Fl. Brit. Ind. 5: 714 (1890).

Desmotrichum kunstleri (Hook. f.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 356 (1910).

Distribution: Malay Peninsula.

36. **Ephemerantha labangensis** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium labangense J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 2: 61 (1920).

Distribution: Borneo.

37. **Ephemerantha laciniosa** (*Ridl.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium laciniosum Ridl. in Journ. Linn. Soc. Bot. 32: 242 (1896).

Desmotrichum laciniosum (Ridl.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 346 (1910).

Dendrobium mentosum Schltr. in Fedde, Repert. Spec. Nov. 10: 77 (1911).

Distribution: Malay Peninsula, Celebes.

38. **Ephemerantha lonchophylla** (*Hook. f.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium lonchophyllum Hook. f. Fl. Brit. Ind. 5: 714 (1890).

Desmotrichum lonchophyllum (Hook. f.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 350 (1910).

Distribution: Malay Peninsula.

39. **Ephemerantha longirepens** (*Ames et C. Schweinf.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium longirepens Ames et C. Schweinf. in Ames, Orchid. 6: 105 (1920).

Desmotrichum longirepens (Ames et C. Schweinf.) A. D. Hawkes in Lloydia, 20: 126 (1957).

Distribution: Borneo.

40. **Ephemerantha luxurians** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium luxurians J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 3: 288 (1921).

Desmotrichum luxurians (J. J. Sm.) Carr in Gard. Bull. Straits Settlements, 7: 9 (1932).

Distribution: Java, Borneo.

41. **Ephemerantha macraei** (*Lindl.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium macraei Lindl. Gen. & Sp. Orch. Pl. 75 (1830).

Callista macraei (Lindl.) Kuntze, Rev. Gen. Pl. 655 (1891).

Distribution: India.

We consider this entity to be quite distinct from *E. fimbriata* (Bl.) P. F. Hunt & Summerh.

42. **Ephemerantha maculosa** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium maculosum J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 2: 62 (1920).

Distribution: unknown; described from a cultivated plant.

43. **Ephemerantha pallens** (*Ridl.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium pallens Ridl. in Journ. Linn. Soc. Bot. 32: 241 (1896).

Desmotrichum pallens (Ridl.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 358 (1910).

Distribution: Thailand.

44. **Ephemerantha parietiformis** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium parietiforme J. J. Sm. in Ic. Bogor. 2: 92 (1903).

Desmotrichum parietiforme (J. J. Sm.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 349 (1910).

Distribution: Celebes.

45. **Ephemerantha paucilaciniata** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium paucilaciniatum J. J. Sm. in Ic. Bogor. 2: 89 (1903).

Desmotrichum paucilaciniatum (J. J. Sm.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 345 (1910).

Distribution: Moluccas.

46. **Ephemerantha pectinata** *P. F. Hunt et Summerhayes,* nom. nov.

Dendrobium pectinatum Ridl. in Journ. As. Soc. Straits, 45: 232 (1906), non Finet (1903).

Distribution: Christmas Island.

47. **Ephemerantha pemae** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium pemae Schltr. in Fedde, Repert. Spec. Nov. Beih. 1: 455 (1912).

Desmotrichum pemae (Schltr.) A. D. Hawkes in Lloydia, 20: 126 (1957).

Distribution: New Guinea.

48. **Ephemerantha piestobolbon** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium piestobulbon Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104: 30 (1911).

Distribution: Sumatra.

49. **Ephemerantha poilanei** (*Gagnep.*) *P. F. Hunt et Summerhayes,* comb. nov.

Desmotrichum poilanei Gagnep. in Bull. Mus. Hist. Nat. Paris, sér. 2. 3: 681 (1931).

Distribution: Annam.

50. **Ephemerantha pseudoconvexa** (*Ames*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium pseudoconvexum Ames, Orchid. 5: 135 (1915).

Desmotrichum pseudoconvexum (Ames) A. D. Hawkes in Lloydia, 20: 126 (1957).

Distribution: Philippines.

51. **Ephemerantha purpureostelidium** (*Ames*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium purpureostelidium Ames, Orchid. 5: 136 (1915).

Desmotrichum purpureostelidium (Ames) A. D. Hawkes in Lloydia, 20: 127 (1957).

Distribution: Philippines.

52. **Ephemerantha quadriloba** (*Rolfe*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium quadrilobum Rolfe in Bull. Misc. Inf. Kew, 1896: 44 (1896).

Desmotrichum quadrilobum (Rolfe) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 353 (1910).

Distribution: ? New Guinea.

53. **Ephemerantha rhipidiloba** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium rhipidilobum Schltr. in K. Schum. et Lauterb. Nachtr. Fl. Deutsch. Südsee, 151 (1905).

Desmotrichum rhipidilobum (Schltr.) A. D. Hawkes in Lloydia, 20: 127 (1957).

Distribution: New Guinea.

54. **Ephemerantha rhodobalia** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium rhodobalion Schltr. in Fedde, Repert. Spec. Nov. 8: 501 (1910).

Distribution: Celebes.

55. **Ephemerantha ritaeana** (*King et Pantl.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium ritaeanum King et Pantl. in Journ. As. Soc. Bengal, 66, II: 583 (1897).

Desmotrichum riteanum (King et Pantl.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 351 (1910).

Distribution: Assam (Khasia Hills).

56. **Ephemerantha schinzii** (*Rolfe*) *P. F. Hunt et Summerhayes* comb. nov.

Dendrobium schinzii Rolfe in Bull. Misc. Inf. Kew, 1906: 31 (1906).

Dendrobium rhopalobulbum Schltr. in Bull. Herb. Boiss. sér. 2. 6: 457 (1906).

Desmotrichum schinzii (Rolfe) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 350 (1910).

Desmotrichum rhopalobulbum (Schltr.) A. D. Hawkes in Lloydia, 20: 127 (1957) '*rhopalobulbon*'.

Distribution: Sumatra.

57. **Ephemerantha schistoglossa** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium schistoglossum Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104: 31 (1911).

Distribution: Sumatra.

58. **Ephemerantha scopa** (*Lindl.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium scopa Lindl. in Bot. Reg. 28: Misc. 45 (1842).

Desmotrichum scopa (Lindl.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 349 (1910), pro parte.

Distribution: Malaysia.

59. **Ephemerantha sematoglossa** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium sematoglossum Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104: 30 (1911).

Distribution: Sumatra.

60. **Ephemerantha simplicicaulis** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium simplicicaule J. J. Sm. in Nova Guinea, 14: 409 (1929).

Desmotrichum simplicicaule (J. J. Sm.) A. D. Hawkes in Lloydia, 20: 127 (1957).

Distribution: New Guinea.

61. **Ephemerantha smithii** *P. F. Hunt et Summerhayes,* nom. nov.

Dendrobium forcipatum J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 2: 64 (1920).

Distribution: Sumatra.

The epithet *forcipatum* cannot be used because of *Ephemerantha forcipata* (Kraenzl.) P. F. Hunt & Summerh. based on the earlier *Desmotrichum forcipatum* Kraenzl. (1910). This species is named in honour of Dr. Johannes Jacobus Smith who did so much to further our knowledge of the Malaysian orchid flora.

62. **Ephemerantha thysanochila** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium thysanochilum Schltr. in K. Schum. et Lauterb. Nachtr. Fl. Deutsch. Südsee, 152 (1905).

Desmotrichum thysanochilum (Schltr.) Carr in Bull. Misc. Inf. Kew, 1934: 380 (1934).

Distribution: New Guinea, New Britain.

63. **Ephemerantha trifurcata** (*Carr*) *P. F. Hunt et Summerhayes,* comb. nov.

Desmotrichum trifurcatum Carr in Journ. Roy. As. Soc. Mal. Br. 11: 85 (1933).

Distribution: Sumatra.

64. **Ephemerantha trilamellata** *P. F. Hunt et Summerhayes,* nom. nov.

Dendrobium trilamellatum Schltr. in Engl. Bot. Jahrb. 45, Beibl. 104: 29 (1911), non J. J. Sm. (1908).

Distribution: Sumatra.

65. **Ephemerantha unicornis** (*Ames*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium unicorne Ames, Orchid. 5: 140 (1915).

Desmotrichum unicorne (Ames) A. D. Hawkes in Lloydia, 20: 127 (1957).
Distribution: Philippines.

66. **Ephemerantha usterii** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium usterii Schltr. in Bull. Herb. Boiss. sér. 2. 6: 458 (1906).
Distribution: Philippines.

67. **Ephemerantha xantholeuca** (*Rchb. f.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium xantholeucum Rchb. f. Xen. Orch. 2: 73 (1862).
Dendrobium pallidiflorum Ridl. in Journ. Linn. Soc. Bot. 32: 240 (1896).
Desmotrichum xantholeucum (Rchb. f.) Kraenzl. in Engl. Pflanzenr. Orch.- Dendrob. 1: 354 (1910).
Desmotrichum pallidiflorum (Ridl.) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 357 (1910).
Distribution: Java, Malay Peninsula.

68. *Ephemerantha xantholeuca* var. **obtusiloba** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium xantholeucum var. *obtusilobum* J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 2: 88 (1920).
Distribution: Borneo.

Species Excludendae

1. *Desmotrichum cymbidioides* Bl. Bijdr. 332 (1825).
Dendrobium cymbidioides (Bl.) Lindl. Gen & Sp. Orch. Pl. 77 (1830).
Dendrobium marginatum Teysm. et Binn. in Tijdschr. Ned. Ind. 5: 490 (1853).
Callista cymbidioides (Bl.) Kuntze, Rev. Gen. Pl. 653 (1891).
Sarcopodium cymbidioides (Bl.) Rolfe in Orch. Rev. 18: 238 (1910).
Katharinea cymbidioides (Bl.) A. D. Hawkes in Lloydia, 19: 95 (1956).
Distribution: Java, Sumatra.
This concept is now known as **Epigeneium cymbidioides** (*Bl.*) *Summerhayes.*

2. *Desmotrichum elongatum* Bl. Bijdr. 332 (1825).
Dendrobium elongatum (Bl.) Lindl. Gen. & Sp. Orch. Pl. 77 (1830).
Sarcopodium elongatum (Bl.) Rolfe in Orch. Rev. 18: 239 (1910).
Katharinea elongata (Bl.) A. D. Hawkes in Lloydia, 19: 95 (1956).
Distribution: Java.
This concept is now known as **Epigeneium elongatum** (*Bl.*) *Summerhayes.*

3. *Desmotrichum fargesii* (Finet) Kraenzl. in Engl. Pflanzenr. Orch.-Dendrob. 1: 358 (1910).
Dendrobium fargesii Finet in Bull. Soc. Bot. Fr. 50: 374 (1903).
Sarcopodium fargesii (Finet) Tang et Wang in Act. Phytotax. Sin. 1: 83 (1951).
Distribution: China (Szechuan).
This concept is the type species of the genus **Epigeneium** *Gagnep.* (**E. fargesii** (*Finet*) *Gagnep.*).

4. *Desmotrichum geminatum* Bl. Bijdr. 332 (1825).
Dendrobium geminatum (Bl.) Lindl. Gen. & Sp. Orch. Pl. 77 (1830).
Sarcopodium geminatum (Bl.) Rolfe in Orch. Rev. 18: 238 (1910).
Katharinea geminata (Bl.) A. D. Hawkes in Lloydia, 19: 96 (1956).
Distribution: Java, Malay Peninsula.
This concept is now known as **Epigeneium geminatum** (*Bl.*) *Summerhayes.*

5. *Desmotrichum pumilum* (Roxb.) A. D. Hawkes in Lloydia, 20: 126 (1957).
Dendrobium pumilum Roxb. Fl. Ind. 3: 479 (1832), non Sw. (1805).
See below, under *Desmotrichum pusillum* Bl.

6. *Desmotrichum pusillum* Bl. Bijdr. 329 (1825).
Dendrobium pusillum (Bl.) Lindl. Gen. & Sp. Orch. Pl. 77 (1830), non Kunth (1815), nec Don (1825).
Dendrobium pumilum Roxb. Fl. Ind. 3: 479 (1832), non Sw. (1805).
Dendrobium carnosum Teysm. et Binn. in Tijdschr. Ned. Ind. 5: 489 (1853).
Callista pusilla (Bl.) Kuntze, Rev. Gen. Pl. 655 (1891).
Callista pumila (Roxb.) Kuntze, l.c.
Callista pachyphylla Kuntze, l.c. 654 (1891).
Dendrobium borneense Finet in Bull. Soc. Bot. Fr. 50: 373 (1903).
Desmotrichum pumilum (Roxb.) A. D. Hawkes in Lloydia, 20: 126 (1957).
Distribution: Tropical Asia.
This concept is a true *Dendrobium,* the correct name being *Dendrobium carnosum* Teysm. et Binn. since the earliest epithets in the entity, that is to say, *pusillum* and *pumilum,* cannot be used as they are later homonyms. Hawkes (Lloydia 20: 126) is incorrect in dating the name *Dendrobium pumilum* Roxb. from the Hortus Bengalensis (1814) since it is not validly published there, but only later in Roxburgh's Flora Indica (1832).

As regards the earlier uses of these epithets *Dendrobium pusillum* Kunth [H.B. & K. Nov. Gen. et Sp. 1: 357 (1815)] is referable to the genus *Pleurothallis* viz. *P. pusilla* (Kunth) Lindl. [Bot. Reg. 28: Misc. 82 (1842)], a Jamaican plant, while *Dendrobium pusillum* Don [Prodr. Fl. Nep. 35 (1825)] is now referable to *Dendrobium monticola* P. F. Hunt et Summerhayes (see p. 110).

Dendrobium pumilum Sw. [Schrad. Neues Journ. 1: 97 (1805)] is the basis of *Genyorchis pumila* (Sw.) Schltr. [Engl. Bot. Jahrb. 38: 12 (1905)].

7. *Desmotrichum triflorum* Bl. Bijdr. 331 (1825).

Dendrobium triflorum (Bl.) Lindl. Gen. & Sp. Orch. Pl. 77 (1830).

Sarcopodium triflorum (Bl.) Rolfe in Orch. Rev. 18: 239 (1910).

Distribution: Java.

This concept is now known as **Epigeneium triflorum** (*Bl.*) *Summerh.*

2. New Combinations in the genus Diplocaulobium (Rchb. f.) Kraenzl.

Kraenzlin transferred many species of *Dendrobium* to the distinct genus *Diplocaulobium* in his treatment of the *Dendrobiinae* (Engl. Pflanzenr. Orch.-Dendrob. 1: 1910). In 1957 (Lloydia, 20) A. D. Hawkes added to the number by transferring further species which had been described in *Dendrobium* after the publication of Kraenzlin's monograph. There still remain many species of *Dendrobium* sect. *Diplocaulobium* which were overlooked by Hawkes and which have so far not been transferred to Kraenzlin's genus, so the necessary combinations are made herewith. We have not examined these critically but as nearly all of them were described by Dr. J. J. Smith, whose knowledge of the orchids of Malaysia was unrivalled, it seems probable that they are distinct entities.

1. **Diplocaulobium aduncilobum** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium aduncilobum J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 9: 156 (1927).

Distribution: Moluccas.

2. **Diplocaulobium ajoebii** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium ajoebii J. J. Sm. in Fedde, Repert. Spec. Nov. 12: 33 (1913).

Distribution: New Guinea.

3. **Diplocaulobium aratriferum** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium aratriferum J. J. Sm. in Bull. Dép. Agric. Ind. Néerl. 19: 13 (1908).

Distribution: New Guinea.

4. *Diplocaulobium aureicolor* (J. J. Sm.) A. D. Hawkes var. **cyclopense** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium aureicolor J. J. Sm. var. *cyclopense* J. J. Sm. in Nova Guinea, 12: 296 (1916).

Distribution: New Guinea.

5. *Diplocaulobium aureicolor* var. **major** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium aureicolor var. *major* Schltr. in Fedde, Repert. Spec. Nov. Beih. 1: 476 (1914).

Distribution: New Guinea.

6. *Diplocaulobium aureicolor* var. **minor** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium aureicolor var. *minor* Schltr. in Fedde, Repert. Spec. Nov. Beih. 1: 476 (1914).

Distribution: New Guinea.

7. **Diplocaulobium centrale** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium centrale J. J. Sm. in Bull. Dép. Agric. Ind. Néerl. 45: 3 (1911).

Distribution: New Guinea.

8. *Diplocaulobium centrale* var. **contractum** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium centrale var. *contractum* J. J. Sm. in Engl. Bot. Jahrb. 66: 189 (1934).

Distribution: New Guinea.

9. **Diplocaulobium cervicaliferum** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium cervicaliferum J. J. Sm. in Fedde, Repert. Spec. Nov. 12: 33 (1913).

Distribution: New Guinea.

10. **Diplocaulobium compressicolle** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium compressicolle J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 2. 3: 71 (1912).

Distribution: New Guinea.

11. **Diplocaulobium connexicostatum** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium connexicostatum J. J. Sm. in Nova Guinea, 18: 39 (1936).

Distribution: New Guinea.

12. **Diplocaulobium ditschiense** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.

Dendrobium ditschiense J. J. Sm. in Engl. Bot. Jahrb. 66: 188 (1934).

Distribution: New Guinea.

13. *Diplocaulobium franssenianum* (J. J. Sm.) A. D. Hawkes, var. **latilobum** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium franssenianum J. J. Sm. var. *latilobum* J. J. Sm. in Nova Guinea, 12: 290 (1916).
Distribution: New Guinea.

14. *Diplocaulobium hydrophilum* (J. J. Sm.) Kraenzl., var. **morotaiense** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium hydrophilum var. *morotaiense* J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 11: 75 (1930).
Distribution: Morotai Islands.

15. **Diplocaulobium isthmiferum** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium isthmiferum J. J. Sm. in Nova Guinea, 18: 41 (1936).
Distribution: New Guinea.

16. **Diplocaulobium kirchianum** (*A. D. Hawkes et A. H. Heller*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium bulbophylloides J. J. Sm. in Fedde, Repert. Spec. Nov. 12: 31 (1913), non Schltr. (1912).
Dendrobium kirchianum A. D. Hawkes et A. H. Heller in Lloydia, 20: 121 (1957).
Distribution: New Guinea.

17. **Diplocaulobium janowskii** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium janowskii J. J. Sm. in Fedde, Repert. Spec. Nov. 12: 33 (1913).
Distribution: New Guinea.

18. **Diplocaulobium nitidicolle** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium nitidicolle J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 2. 3: 59 (1912).
Distribution: Celebes.

19. **Diplocaulobium papillilabium** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium papillilabium J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 8: 49 (1926).
Distribution: Saela Islands.

20. **Diplocaulobium pililobum** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium pililobum J. J. Sm. in Fedde, Repert. Spec. Nov. 12: 34 (1913).
Distribution: New Guinea.

21. **Diplocaulobium platyclinoides** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium platyclinoides J. J. Sm. in Fedde, Repert. Spec. Nov. 12: 32 (1913).
Distribution: New Guinea.

22. **Diplocaulobium scotiiforme** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium scotiiforme J. J. Sm. in Fedde, Repert. Spec. Nov. 12: 32 (1913).
Distribution: New Guinea.

23. *Diplocaulobium scotiiforme,* var. **tenuifolium** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium scotiiforme var. *tenuifolium* J. J. Sm. in Nova Guinea, 14: 400 (1929).
Distribution: New Guinea.

24. **Diplocaulobium sitanalae** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium sitanalae J. J. Sm. in Meded. Herb. Leid. 23: 7 (1915).
Distribution: New Guinea.

25. **Diplocaulobium stenophyton** (*Schltr.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium stenophyton Schltr. in Fedde, Repert. Spec. Nov. 8: 500 (1910).
Distribution: Celebes.

26. **Diplocaulobium sublobatum** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium sublobatum J. J. Sm. in Fedde, Repert. Spec. Nov. 12: 31 (1913).
Distribution: New Guinea.

27. **Diplocaulobium textile** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium textile J. J. Sm. in Bull. Jard. Bot. Buitenz. sér. 3. 12: 132 (1932).
Distribution: Celebes.

28. **Diplocaulobium tuberculatum** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium tuberculatum J. J. Sm. in Fedde, Repert. Spec. Nov. 12: 31 (1913).
Distribution: New Guinea.

29. **Diplocaulobium vanleeuwenii** (*J. J. Sm.*) *P. F. Hunt et Summerhayes,* comb. nov.
Dendrobium vanleeuwenii J. J. Sm. in Nova Guinea, 18: 40 (1936).
Distribution: New Guinea.

3. Miscellaneous Notes

Coelogyne radicosa *Ridl.* in Journ. Fed. Mal. States Mus. 6: 57 (1915), *'radicosus'*.
Coelogyne carnea Hook. f. Fl. Brit. Ind. 5: 838 (1890), non (Bl.) Rchb. f. (1861).
Coelogyne carnea Hook. f. is a later homonym and, as the two entities cited above are considered to be conspecific, the correct name for the species is therefore *C. radicosa* Ridl. The earlier *Coelogyne carnea* (Bl.)

Rchb. f. [Walp. Ann. 6: 237 (1861)] based on *Crinonia carnea* Bl. Bijdr. 339 (1825) is referable to the genus *Pholidota* [*P. carnea* (Bl.) Lindl. Gen. & Sp. Orch. Pl. 37: 1830].

Dendrobium monticola *P. F. Hunt et Summerhayes*, nom. nov.

D. alpestre Royle, Ill. 370, t. 88 (1839), non (Sw.) Sw. (1799).

Owing to the existence of *Dendrobium alpestre* (Sw.) Sw., (actually a species of *Pleurothallis, P. alpestris* (Sw.) Lindl.) which was published in 1799 (Nov. Act. Nat. Soc. Sci. Ups. 6: 84) Royle's epithet cannot be used for this plant. We therefore substitute the epithet *monticola* which has a similar meaning. It is probable that *D. pusillum* Don (1825) is conspecific with *D. alpestre* Royle but this epithet also cannot be used because of the earlier *D. pusillum* Kunth (see p. 108).

Dendrobium clavatum.

This name has been validly published for two different species, and as each name had been used previously without a validating description this has given rise to considerable confusion.

1. *D. clavatum* Roxb. Fl. Ind. ed. 2. 3: 481 (1832).

This entity is referable to *D. densiflorum* Lindl. ex Wall. [Pl. As. Rar. 1: 34, t. 40 (1830)]. Roxburgh used the name in his *Hortus Bengalensis* in 1814 (p. 63) but it was not validly published there. Hawkes and Heller [Lloydia, 20: 123 (1957)] identify this 1814 use with *D. amabile* (Lour.) O'Brien.

2. *D. clavatum* Lindl. in Paxt. Fl. Gard. 2: 104, t. 189 (1851-2).

Dr. A. F. G. Kerr, realising that Lindley's name was a later homonym of *D. clavatum* Roxb., renamed it *D. denneanum* [Journ. Siam Soc. Nat. Hist. Suppl. 9: 229 (1933)]. *D. clavatum* was listed in the Wallich Catalogue in 1828 (no. 2004) but Lindley did not validly publish this name until 1851-2. However, as Kerr points out, some of the numbers of the sheets from the Wallichian distribution in Lindley's herbarium have become transposed, and although Lindley quotes Wallich Catalogue no. 2004 as an example of his *D. clavatum*, this is not the case, *D. clavatum* Lindl. being actually Wallich's no. 2000. The real no. 2004 distributed by Wallich, was not in flower and consequently Lindley ignored it in his well known account of the family (Gen. and Sp. Orch. Pl. 1830). It is therefore evident that two different plants are included in this second use of the name *D. clavatum*.

Hawkes and Heller (loc. cit.) consequently proposed the name *Dendrobium rolfei* for the Wallich Catalogue plant under the mistaken impression that the name was validly published in 1828. As, however, it was merely a nomen nudum any name substituted for it must necessarily also be a nomen nudum and that, unfortunately, is the status of *D. rolfei* Hawkes et Heller.

Dendrobium clavatum Lindl. var. **aurantiacum** (Rchb. f.) Tang et Wang in Act. Phytotax. Sin. 1: 80 (1951).

In the publication of this variety Tang and Wang cite *D. denneanum* Kerr as a synonym. However, as pointed out above, *D. denneanum* is the correct name for *D. clavatum* Lindl., and therefore *D. denneanum* cannot be treated as a variety of itself! This error probably arose by Tang and Wang regarding as the type of *D. denneanum* the specimen collected by Kerr (no. 965a). This specimen, however, is only mentioned because the paper in which the name *D. denneanum* was published dealt with a list of Laos plants collected by the author.

Dendrobium concinnum *Miq.* in Fl. Ind. Bat. 3: 644 (1855).

Oxystophyllum carnosum Bl. Bijdr. 335 (1825).

Dendrobium carnosum (Bl.) Rchb. f. in Walp. Ann. 6: 280 (1864) non Teysm. et Binn. (1853).

Callista carnosa (Bl.) Kuntze, Rev. Gen. Pl. 654 (1891).

The name *Dendrobium carnosum* (Bl.) Rchb. f. is a later homonym and therefore the species must bear the name *D. concinnum* Miq.

NOMINA GENERICA CONSERVANDA ET REJICIENDA SPERMATOPHYTORUM VIII* BIBLIOGRAPHY

H. W. Rickett (New York) and F. A. Stafleu (Utrecht)

Kunth, Carl Sigismund, 1788-1850.

ENUMERATIO/PLANTARUM/..../

Enum. (454, 471a, 800, 808, 830, 921, 957, 987, 1007, 1050, 1332)

Vol. 1, 1833 sem. 2.	3, Jul	1841.
1 (suppl.), 1835 sem. 1.	4, Jul	1843.
2, 1837 sem. 1.	5, Jun	1850.

Ref.: Stearn, Fl. Males. 5(4): cxcv. 1954.

EICHHORNIA,/GENUS NOVUM/E FAMILIA/PONTEDERIACEARUM./..../BEROLINI 1842./

Eichhornia, genus novum [Diss.]. (921)

Kuntze, Carl Ernst Otto, 1843-1907.

REVISIO/GENERUM PLANTARUM/..../

Rev. Gen. (904, 909, 2339, 3106, 3767, 3877, 4073, 6191, 6504, 7148, 7342, 9091)

Vols. 1 & 2, pp. 1-1011	5 Nov	1891.
Vol. 3(1) pp. i-ccccx	5 Aug	1893.
3(2) pp. 1-202	28 Sep	1898.
3(3) pp. 1-576	28 Sep	1898.

Kurz, Sulpiz, 1824-1878.

REPORT/ON THE/VEGETATION OF THE ANDAMAN ISLANDS./..../1870./

Rep. And. Is. ed. 2. (4073)

Ed. 1, 1867, ed. 2, 1870.

Labillardière, Jacques Julien Houtton de, 1755-1834.

RELATION/DU VOYAGE A/LA RECHERCHE/DE LA PÉROUSE/..../

Voy. Pérouse. (2097, 6254)

Vol. 1, Jan-Feb 1800 (probably); Labillardière sent Banks a copy on 5 Mar 1800.

Ref.: Dawson, The Banks Letters 514. 1958.

NOVAE HOLLANDIAE/PLANTARUM SPECIMEN./..../

Nov. Holl. Pl. Spec. (13, 15, 206, 800, 808, 815, 1289, 1449, 9028, 9054)

Parts	Plates	Dates
1	*1-10*	1804 sero.
2-4	*11-40*	Jan-Feb 1805.
5-7	*41-70*	Mai 1805.
8	*71-80*	Jul 1805.
9	*81-90*	Sep 1805.
10-14	*91-140*	Oct-Dec 1805.
15-16	*141-160*	Jan-Feb 1806.
17	*161-170*	Mar 1806.
18	*171-180*	Apr 1806.
19-21	*181-210*	Jun 1806.
22	*211-220*	Jul 1806.
23	*221-230*	Aug 1806.
24	*231-240*	Jun 1807.
25-27	*241-270*	Aug 1807.

Parts 1-14 constitute vol. 1, 15-27 vol. 2. It is possible that *t. 141, 142* were issued with the 14th part.

Ref.: Journ. Gén. Lit. Fr. 1804-1807.
Stearn, Fl. Males. 5(4): clxxi. 1954.
Sayre, Dates of Publications 31. 1959.
Labillardière, Ann. Mus. Hist. Nat. Paris 6: 452. 1805.

Lagasca y Segura, Mariano, 1776-1839.

AMENIDADES/NATURALES/DE/LAS ESPAÑAS/..../

Amen. Nat. Esp. (9528)
1(1), 1811; 1(2), 1821.

GENERA/ET SPECIES PLANTARUM, QUAE AUT NOVAE SUNT,/..../

Gen. Sp. (356, 8541, 9150, 9285)
1816 post 1 Apr (date of preface).

La Llave, Pablo de, 1773-1833; Lexarza, Juan Martinez de, 1785-1824.
(1617)

Lam, Herman Johannes, 1892-

THE VERBENACEAE/OF THE/MALAYAN ARCHIPELAGO/..../

Verbenac. Malay. Arch. (post 7181)
7 Apr 1919.

Lamarck, Jean Baptiste Antoine Pierre Monnet de, 1744-1829.

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* Continued from Taxon 10: 91. 1961.

ENCYCLOPÉDIE/MÉTHODIQUE/
BOTANIQUE,/..../
Enc. (25 references)

Vols. 1-4 by Lamarck, 5-8 by Poiret, who also contributed many articles to the preceding volumes. Suppl. vols. 1-5 by Poiret.

The following analysis is given by M. Breistroffer:

Vol.	Part	Pages	Livr.	Dates
I	1	1-344	1-6	2 Dec 1783.
	2	345-752	7-14	1 Aug 1785.
II	1	1-400	15-20	16 Oct 1786.
	2	401-774	21-26	14 Apr 1788.
III	1	1-360	27-34	19 Oct 1789.
	2	361-760	35-48	13 Feb 1792.
IV	1	1-400	49-61	9 Feb 1797.
	2	401-754	62-65	1 Nov 1798.
V		1-748	66-68	9 Jan 1804.
VI	1	1-384	69	2 Oct 1804.
	2	385-786	70	28 Aug 1805.
VII		1-731	71	6 Jul 1806.
VIII		1-879	72	22 Aug 1808.
suppl. I	1	1-400	73-74	3 Sep 1810.
	2	401-761	75	2 Mai 1811.
suppl. II	1	1-384	76	23 Oct 1811.
	2	385-876	77	22 Jul 1812.
suppl. III	1	1-368	78	26 Sep 1813.
	2	367-780	79-80	1 Sep 1814.
suppl. IV	1	1-368	81-83	26 Jun 1816.
	2	369-780	84	23 Jan 1817.
suppl. V	1	1-526	85	5 Nov 1817.
	2	527-780	85	5 Nov 1817.

Ref.: Breistroffer, Proc. Verb. Mens. Soc. Dauph. Ethn. Arch. **24** (nos. 182-184), Mar-Mai 1948.

Sayre, Dates of Publications (various places) 1959.

v. Steenis-Kruseman et Stearn, Fl. Males. **4**(5): cxcv. 1954 (q.v. for further references).

TABLEAU ENCYCLOPÉDIQUE

Vols. 1-5(1) by Lamarck, vols. 5(2) and tome 3 by Poiret. Often cited as 'Illustration des Genres.' The following analysis is again by M. Breistroffer:

Tome Vol.	Part	Pages	Plates	Livr.	Dates
I(1)	1	1-200	*1-100*	44	3 Jun 1791.
	2	201-352	*101-200*	48	13 Feb 1792.
(2)	1	353-440	*201-300*	50	30 Jul 1792.
	2	441-496	*301-400*	53	11 Feb 1793.
II(3)	1	1-40	*401-500*	57	10 Apr 1794.
	2	41-48	*501-600*	58	1 Sep 1794.
(4)	1	49-72	*601-700*	60	21 Nov 1796.
	2	73-136	*701-800*	63	6 Nov 1797.
(5)	1	. .	*801-900*	66	22 Dec 1799.
	2	137-551	*900-950*	88	31 Oct 1819.
			950-1000	92	22 Feb 1823.
III(-)	-	1-728	—	92	22 Feb 1823.

Ref.: see above under Lamarck, Enc.

Lamarck, Jean Baptiste Antoine Pierre Monnet de, 1744-1829; Candolle, Augustin Pyramus de, 1778-1841.

FLORE/FRANÇAISE,/..../TROISIÈME ÉDITION/....

Tomes 1-4 (t. 4 in two volumes with consecutive pagination) 17 Sep 1805; tome 5 (volume 6) 8 Oct 1815.

According to the review in Journ. Gén. Lit. Fr. **8**(9): 260 (Sep 1805) the 'tomes' 1-4 (volumes 1-5) were issued at the same time. This edition was entirely the work of De Candolle; see the preface.

Ref.: Sayre, Dates of Publications 25, 49, 1959.

Lambert, Aylmer Bourke, 1761-1842.
(20, 31)

Lamson-Scribner, see Scribner.

Ledebour, Carl Friedrich von, 1785-1851.

FLORA ALTAICA./..../

Fl. Altaica. (1077, 3050)
vol. 1, 1829 sem. 2(?).
2, 1830 sem. 2(?).
3, 1831 sem. 2(?).
4, 1833 sem. 2(?).
index, 1834 prob.

Ref.: Stearn, Journ. Arnold Arb. **22**: 228. 1941.

Lehmann, Johann Georg Christian, 1792-1860.

SEMINA/IN/HORTO BOTANICO HAMBURGENSI/1826/COLLECTA /..../1826/

Ind. Sem. Hort. Hamb. (3858)
1826.

NOVARUM/ET/MINUS COGNITARUM STIRPIUM/PUGILLUS OCTAVUS/....

Nov. Stirp. Pugill. 8. (7900)
1844 sem. 1.

A reissue of part of the 'Index scholarum in Gymnasio Hamburgensium Academico a Paschate 1844 usque ad Pascha 1845 habendarum'. All Lehmann's *Pugilli* (10 numbers,

1828-1857) were originally published as parts of these indices. The copies in the various libraries often consist partly of the reprints and partly of the original publication.

Ref.: Britten, Journ. Bot. **58**: 198. 1920.
Barnhart, letter to Britten dated 16 Sep 1920.

Lemaire, Charles Antoine, 1801-1871.
(329, post 8473)

Leschenault de la Tour, Jean Baptiste Louis Theodor, 1773-1826.
(1956)

Lessing, Christian Friedrich, 1809-1862.

SYNOPSIS/GENERUM/ COMPOSITARUM/....
Syn. Gen. Comp. (7035, 8918, 8926)
1832.

Lestiboudois, Thémistocle, 1797-1876.

ESSAI/SUR/LA FAMILLE DES CYPÉRACÉES;/..../
Ess. Cyp. (465, 468a, 468b)
1819.

Ref.: Bentham, Journ. Linn. Soc. **18**: 360. 1881.

L'Héritier de Brutelle, Charles Louis, 1746-1800.

STIRPES NOVAE,/..../M. DCC. LXXXIV./
Stirp. Nov. (4927, 5053, 7350, 7766)

Part	Pages	Plates	Dates
1	i-vi, 1-20	*1-10*	Mar 1785.
2	vii-viii, 21-40	*11-20*	Jan 1786.
3	ix-x, 41-62	*21-30*	Mar 1786.
4	xi-xii, 63-102	*31-48*	Mar 1788.
5	xiii-xiv, 103-134	*49-64*	Jan 1789.
6	xv-xvi, 135-181	*65-84*	Feb-Sep 1789.
Consp.	183-184		1791.

These dates are based on the summaries given by Britten and Woodward, and by Stearn, with additional information derived from the correspondence between Banks and L'Héritier (Dawson, p. 535-536), and between Cavanilles and Usteri (Mag. Bot. Römer et Usteri **7**: 44. 1790).

Ref. Britten and Woodward, Journ. Bot. **43**: 267. 1905.
v. Steenis-Kruseman, Fl. Males. **4**(5): cxcvii. 1954.
Dawson, The Banks Letters 535. 1958.

VIRGILIA (Pritzel no. 5276)
Diss. Virgilia (3608)
1788(?), plate seen at British Museum (Nat. Hist.), text not seen.

..../SERTUM ANGLICUM,/..../1788./
Sert. Angl. (878, 1046, 1088)

Fasc. 1, pp. 1-36, *t. i-ii* Jan 1789.
Fasc. 2, no text, *t. iii-xii* 1790 sem. 2 prob.
Fasc. 3, no text, *t. xiii-xxiv* 1792 med. prob.
Fasc. 4, no text, *t. xxv-xxxiv* 1792 sero.

L'Héritier purposely antedated his publications because he was of the opinion that they should carry the dates on which they were ready for the press. The above dates are based on contemporary reviews.

Ref.: Kuntze, Rev. Gen. **3**(2): 157. 1898.
Britten and Woodward, Journ. Bot. **43**: 272. 1905.
Stafleu, Taxon (to be published).

Liboschitz, Joseph, 1783-1824.
(7592)

Liebmann, Frederik Michael, 1813-1856.
(5195)

Lilja, Nils, 1808-1870.

FLORA/ÖFVER/SVERIGES ODLADE/ VESTER,/..../FÖRSTA SUPPLEMENTET./..../1840./
Fl. Sver. Suppl. (3871)

Linden, Jean Jules, 1817-1898.
(4060)

Lindley, John, 1799-1865.

COLLECTANEA BOTANICA; ..../
Collect. Bot. (1502, 1834, 1984)

Part	Plates	Dates
1	*5*	1 Apr 1821 (dated).
2	*5*	1 Apr 1821 (dated).
3	*5*	1 Mai 1821 (dated).
4	*5*	1821.
5	*5*	1821.
6	*6*	31 Oct 1821 (dated; + preface).
7	*5*	1821? ?
8	*37-41*	1825 prim.

The evidence for the publication of fasc. 8 is still incomplete. The plates are mentioned in Flora **7**: 727 (14 Dec 1824), as to be published shortly, the watermark of *t. 41* is of 1825; Don's Prodr. Fl. Nepal. (1 Feb 1825) is cited on *t. 41A*. Further research is still necessary.

Ref.: Kuntze, Rev. Gen. **1**: cxxxiii. 1891.
Woodward, Catal. Libr. Brit. Mus. (Nat. Hist.) **3**: 1119. 1910.
Merrill, Contr. Gray Herb. **165**: 30. 1947.
v. Steenis-Kruseman and Stearn, Fl. Males. **4**(5): cxcvii. 1954.

ORCHIDEARUM/SCELETOS./..../1826./
Orch. Scel. (1502, 1697)
1826.

Text identical with Appendix of Collect. Bot. (1825) but 3 plates added here, p. 23-27, with diagnostic details (p. 21, explicatio).
Lindley gave a copy to the British Museum on 19 Aug 1827. A verbatim reprint appeared in Linnaea **2**: 527-532 (1827). It seems questionable whether this 1826 edition was really issued in that year. At any rate the 1825 edition (Collect. Bot. Append.) is the one that counts.

A/NATURAL SYSTEM OF BOTANY;/..../
SECOND EDITION./..../....
Nat. Syst. ed. 2 (816, 7082, 7632, 8042, 9258)
1836.

The first edition (1830) [and there was a second edition of this in 1835 (Pritzel, Kew Catal.)] was titled AN/INTRODUCTION/TO THE/NATURAL SYSTEM OF BOTANY:/ OR,/A SYSTEMATIC VIEW/....

For descriptions of new genera by Nees v. Esenbeck, Bentham, et al., see p. 439-452.]

THE/GENERA AND SPECIES/OF/ ORCHIDACEOUS PLANTS./..../
Gen. Sp. Orch. Pl. (1408, 1502, 1558, 1617, 1704)

Issued in seven parts Apr 1830-Oct 1840 (pp. 1-94, 95-134, 135-256, 257-335, 337-380, 381-440, 441-553) the first four being entitled "The genera and species of orchideous plants." Each signature (of 8 pages) was dated at the bottom of the first page, and probably distributed separately in advance of the part. Since contemporary reviews do not contradict this assumption, we have taken these dates of the signatures as the actual dates of publication.

THE VEGETABLE KINGDOM;/..../
Veg. Kingd. (7808)

Ed. 1, 1846 (preface Oct 1845); ed. 2, 1848; ed. 3, 1853 sem. 2 (preface 21 Jul).

FOLIA ORCHIDACEA./..../
Fol. Orch. (1714)

Issued in nine parts, separately paged. The 'contents' list the genera treated with the date on which each was "printed". These are probably not the dates of distribution of the parts, since there are many more dates than 9. The dates of receipt of the nine parts at the British Museum (Natural History) are:

1,	6 Nov 1852.	5,	13 Feb 1854.
2,	26 Jan 1853.	6, 7,	6 Nov 1855.
3,	26 Feb 1853.	8,	14 Mar 1859.
4,	2 Mai 1853.	9,	31 Mai 1859.

Ref.: Woodward, Catal. Books Brit. Mus. (Nat. Hist.) **3**: 1121. 1910.

Link, Johann Heinrich Friedrich, 1767-1851.

ENUMERATIO/PLANTARUM/HORTI REGII BOTANICI/BEROLINENSIS/..../
Enum. Hort. Berol. (1904, 2663a, 6014, 7393)
1, 1821 sem. 1; 2, 1822 sem. 1.

Ref.: Stearn, Journ. Bot. **75**: 235. 1937.

Rev.: Bull. Férussac **1**(3): 389. 1 Apr 1823.

HORTUS/REGIUS BOTANICUS/ BEROLINENSIS/..../
Hort. Berol. (381, 468a, 7393)
1, 1827 sem. 2; 2, 1833 sem. 2.

Ref.: Stearn, Journ. Bot. **75**: 235. 1937.

HANDBUCH/ZUR/ERKENNUNG/....
Handb. (3673)
1, 1829; 2, 1831; 3, 1833.

Also entitled: Grundriss der Kräuterkunde zu Vorlesungen entworfen von G. Carl Ludwig Willdenow. Zweiter [dritter, vierter] (praktischer) Theil.

Rev.: 1, '1829': Bull. Férussac **18**: 375. Sep 1829.
2, '1831': Bull. Férussac **26**: 262. Sep 1831.

Linnaeus, Carl, 1707-1778.

/..../AMOENITATES ACADEMICAE,/ ..../
Amoen. Acad. (5510, 8285)
Volumes 1-7, 1749-1769 (Linnaeus edition, Soulsby no. 1280).

Ref.: Soulsby, Catalogue nos. 1272-1332. 1933.
Rickett, Lloydia **18**: 49. 1955.

/..../GENERA/PLANTARUM/..../
Gen. ed. 4 (2412); ed. 5 (7151, 8716); ed. 6 (2180)

Ed. 4, 1752 (Bryk no. 7, Soulsby no. 300).

Ed. 5, Aug 1754 (Bryk no. 8, Soulsby no. 301).
Ed. 6, Jun 1764 (Bryk no. 12, Soulsby no. 305).
Ref.: Soulsby, Catalogue nos. 284-310, 315-338. 1933.
Bryk, Taxon **3**: 174. 1954.
Stearn, Introduction to facsimile edition ed. 5, Weinheim 1960.

/..../SPECIES/PLANTARUM,/..../
Sp. Pl. [ed. 1] (numerous references), ed. 2 (idem)
Ed. 1, 1 Mai 1753 (arbitrary date, see Int. Code Bot. Nom. 1956, Art. 13), actual dates: vol. 1, pp. 1-560, Mai 1753; vol. 2, pp. 561-1200, Aug 1753. (Bryk nos. 1, 6; Soulsby no. 480).
Ed. 2, vol. 1, pp. 1-784, Sep 1762; vol. 2, pp. 785-1684, Aug 1763 (Bryk nos. 13a, b; Soulsby no. 500).
Ref.: Soulsby, Catalogue nos. 480-529. 1933.
Bryk, Taxon **2**: 74. 1953.
Stearn, Introduction to facsimile edition ed. 1, Ray Society 1957-1959.

/..../HERBARIUM/AMBOINENSE,/..../
Herb. Amb. (3853)
11 Mai 1754.
Dissertation defended by Olavus Stickman.
Ref.: Soulsby, Catalogue nos. 1813-1816. 1933.
Rickett, Lloydia **18**: 55. 1955.

/..../OPERA VARIA/..../LUCÆ/..../
Opera varia. (6632)
1758.
Contains *Systema Naturae* (pp. 147-376, *Regnum Vegetabile* pp. 195-274) as well as reprints of the *Fundamenta Botanica* and the *Sponsalia Plantarum*. The *Systema Naturae* is a reprint with slight alterations from the second edition (1740).
Ref.: Soulsby, Catalogue no. 9. 1933.

/..../SYSTEMA/NATURÆ/..../Editio Decima, Reformata./..../
Syst. Nat. ed. 10. (34 references)
Tomus II. Mai-Jun 1759.
Ref.: Richter, Codex xxx. 1835.
Soulsby, Catalogue no. 58. 1933.

/..../PLANTARUM/JAMAICENSIUM/PUGILLUS,/..../
Pl. Jam. Pugil. (3284)
28 Nov. 1759.
Dissertation defended by Gabriel Elmgren.
Ref.: Soulsby, Catalogue nos. 2058-2061. 1933.

/..../SYSTEMA/NATURÆ/..../Editio Duodecima, Reformata./..../
Syst. Nat. ed. 12. (4090, 5428, 5436, 5544, 5603, 6559, 7517, 8430)
Tomus II, second half of Oct 1767.
Ref.: Richter, Codex xxxi. 1835.
Soulsby, Catalogue no. 62. 1933.
Stearn, Introductory Notes on Linnaeus's Mantissa Plantarum, facsimile edition, Weinheim 1961.

/..../MANTISSA/PLANTARUM./..../1767./

/..../MANTISSA/PLANTARUM/ALTERA/..../1771./
Mant. (21 references)
pp. 1-142: second half of Oct 1767.
pp. [143]-587: Oct 1771.
Richter gives October 1767 as the month of publication of both the Systema Naturae ed. 12, vol. 2 and the Mantissa plantarum (prima).
Sprague assumes 'for working purposes' that the work was published in November 1767, at any rate before 21 November. He also states that "the second volume of the 'Systema', ed. 12, and the 'Mantissa' were issued together, probably in a single part."
Soulsby states under number 311 that the work was "issued separately; as an appendix to vol. 2 of the twelfth edition of the Systema Naturae (1766-68) and to the "editio decima tertia" (Vindobonae), (1766-68) and to the "editio decima tertia" (Vindobonae), (1767-70) of the same work". Bryk, however, again demonstrates that the first Mantissa is not an independent typographical product and that it was published as part of the second volume of the Systema Naturae ed. 12. He also mentions a review of the work published on 22 Oct 1767. Stearn concurs with this view and establishes the date at second half of Oct 1761 and states: "The text of the Mantissa thus interlocks with that of the Systema Naturae 12th ed. vol. 2, and Linnaeus's new genera and species were simultaneously published in both, ..."
The Mantissa Plantarum altera is an independent work of which the pagination continues that of the first Mantissa.
Ref.: Richter, Codex xxxi. 1835.
Sprague, Kew Bull. **1929**: 88.
Soulsby, Catalogue nos. 62, 116, 312. 1933.
Bryk, Taxon **2**: 83. 1954 (nos. 21-25).
Stearn, Introductory Notes...., facsimile edition, Weinheim 1961.

/..../PLANTAE SURINAMENSES,/..../
Pl. Surin. (5510, 8316)
23 Jun 1775.
Dissertation defended by Jacob Alm.
Ref.: Soulsby, Catalogue nos. 2438-2440. 1933.

Linnaeus, Carl [filius], 1741-1783.

/..../NOVA/GRAMINUM/GENERA/..../
Nov. Gram. Gen. (127)
21 Dec 1779.
Dissertation defended by Daniel Erix Naezén (1752-1808) and listed by Krok as a publication by that author.
Ref.: Krok, Bibl. Bot. Suec. 519. 1925.

/SUPPLEMENTUM/PLANTARUM/..../
Suppl. (17 references)
1781 sem. 2.
The last page [468] is dated "Londini, 1781". According to Wikström, Ehrhart supervised the printing in Brunswick during the summer of 1781. The book must have been published, therefore, in the second half of 1781.
Ref.: Wikström, Conspectus 190. 1831.

Loefling, Pehr, 1729-1756.

/..../ITER HISPANICUM,/..../
Iter. Hisp. (924, 1971, 2348, 3103, 3204, 3524, 3839, 4195, 5062, 5271, 5538, 9192)
Dec 1758 (fide Rothmaler).
Ref.: Rothmaler, Repert. Sp. Nov. **53**: 31. 1944.

Loiseleur-Deslongchamps, Jean Louis Auguste, 1774-1849.

HERBIER GÉNÉRAL/DE L'AMATEUR, /..../
Herb. Gén. Amat. (2663 a)
Eight volumes, 1816-1827, published in 96 instalments of circa 6 plates each (570 plates). For dates of publication of the various instalments see the Bibliographie de la France.
The plate cited sub 2663 a (*pl. 173*) was published in the 29th part, reviewed in Bibl. Fr. **1818**: 437. 1 Aug 1818.

Looser, Gualterio, 1898-

LISTA DA LAS PLANTAS ..../ OBSERVADAS EN CHILE EN 1828/..../....
Reprint of Bertero, *Catálogo de plantas* ...., edited by Looser, 1933-1936.
See under Bertero.

Loureiro, João de, 1715-1796.

/FLORA/COCHINCHINENSIS:/..../
ANNO M.DCCXC./....
Fl. Cochinch. (30 references)
1790.
The precise date of publication of the first edition, published in Lisbon, is uncertain. From contemporary reviews it would seem that publication took place rather late in the year. The manuscript was accepted for publication by the Academy of Sciences at Lisbon on 9 August 1788, the preface is dated cal. Oct 1788. On 22 April 1791 Loureiro wrote to Banks (see Dawson) complaining that the book was published by the Academy without his permission. He sent a copy to Banks in the course of 1791. The first review found by us is that in the Allgemeine Literatur-Zeitung of 18 Jan 1791.
A second edition was published by Willdenow in Berlin in 1793.
For an extensive commentary on Loureiro's taxonomy see Merrill.
Ref.: Merrill, Trans. Am. Philos. Soc. ser. 2. **24**: 134. 1935.
Dawson, The Banks Letters 556. 1958.
Rev.: Allg. Lit. Zeit. **1791**(1)(15): 113. 18 Jan 1791.
Journ. Phys. Chim. Hist. Nat. Arts **41**: 9. Jan 1792.
Gött. Gelehrte Anz. **1792**: 1249. 6 Aug 1792.

Ludwig, Christian Gottlieb, 1709-1773.

D. CHRISTIANI GOTTLIEB LVDWIG/ ..../DEFINITIONES/GENERVM/ PLANTARVM/OLIM/IN VSVM AVDITORVM COLLECTAS/NVNC/ AVCTAS ET EMENDATAS/EDIDIT/ D. GEORGIVS RVDOLPHVS BOEHMER/..../
Def. Gen. Pl. (57, 374, 985, 1248, 1324, 2986, 3874, 4150, 7056, 7377, 8818, 8862, 9528)
1760.

..../INSTITUTIONES/HISTORICO PHYSICAE/REGNI VEGETABILIS/ ..../EDITIO ALTERA ..../..../
Inst. ed. 2. (1119, 1495)
1757 post Feb.

Maerklin, Georg Friedrich, -1823.
(8312)

Mansfeld, Rudolf, -1960.
(4060, 5938, 9150)

Macfadyen, James, 1800-1850.

THE/FLORA OF JAMAICA;/..../
Fl. Jamaica. (3081)
Vol. 1, 1837 (post 10 Oct); vol. 2 not published.

Some sheets of the second volume reached England. The printing in Jamaica was stopped because of the sudden death of Macfadyen; the rest of the sheets were used as waste paper by the executor of his will. Incomplete copies exist in the libraries of Kew and the British Museum (Nat. Hist.). The dedication to the first volume is dated 10 Oct 1837.

Ref.: Hooker, Journ. Bot. Kew Misc. **2**: 288. 1850.

Maratti, Giovanni Francesco, -1777.

PLANTARUM/ROMULEAE, ET SATURNIAE/..../
Pl. Rom. Sat. (1261)
1772.

Marion, Antoine Fortuné, 1846-1900.
(4037)

Marschall von Bieberstein, Friedrich August, 1768-1826.

FLORA/TAURICO-CAUCASICA/..../
TOMUS III./SUPPLEMENTUM/..../
Fl. Taur.-Cauc. Suppl. (2091)
1819 sero vel 1820.

Approved by Acad. Sci. 30 Jan 1819. Preface dated Dec 1819.

Martens, Martin, 1797-1863; Galeotti, Henri Guillaume, 1814-1858.
(post 8473)

Martius, Karl Friedrich Philipp von, 1794-1868.

HISTORIA NATURALIS/PALMARUM./..../
Hist. Nat. Palm. (657, 660, 670)
1823-1850.

Issued in 10 fascicles of which nos. 1-9 under the title "Genera et Species Palmarum, quas in itinere per Brasiliam annis 1817-1820 collegit" etc. Originally intended as a work devoted to Brazilian palms, its scope was afterwards extended to include all palms, hence change of title. For precise information on contents and dates of publication of the various parts see Woodward and van Steenis-Kruseman. Their dates agree essentially with a very detailed unpublished memoir on the book by Barnhart of which the manuscript is at The New York Botanical Garden.

Ref.: Woodward, Journ. Bot. **46**: 197. 1908.
v. Steenis-Kruseman et Stearn, Fl. Males. **4**(5): cxcix. 1954.
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 643, 738. 1960.

NOVA/GENERA ET SPECIES/ PLANTARUM/..../
Nov. Gen. Sp. (4960, 5144, 5149, 5205, 6301, 6526, 6772, 7860)

Vol. & Part	Pages	Plates	Dates
1(1)	1-20	*1-12*	1823.
(2)	21-36	*13-24*	1823.
(3)	37-84	*25-55*	1 Oct 1824, (1).
(4)	85-158	*56-100*	1826, trim. 1(2).
2(1)	1-68	*101-160*	1826, trim. 2.
(2)	69-148	*161-200*	1827, sem. 1.
3(1)	1-80	*201-231*	1829.
(2)	81-124	*232-272*	1831.
(3)	125-298	*273-300*	Sep 1832, (3)

(1) diagnoses already published before in Flora **7**(1) Beil. (4): 129-142, between 25 Apr and 7 Jul 1824.
(2) idem *t. 56-74* in Flora **8**(1): 27-32. 14 Jan 1825.
(3) date on p. 198.

The above information is based on reviews in Flora, Linnaea and Isis.

Ref.: Woodward, Journ. Bot. **46**: 197. 1908. Barnhart, unpublished memoir at The New York Botanical Garden.

PALMARUM/FAMILIA EJUSQUE GENERA/DENUO ILLUSTRATA./..../
Palm. Fam. (660, 670)
15 Apr 1824 (date on title page).

Note by Barnhart: "later than Hist. Nat. Palm. fasc. 1 and 2, but earlier than fasc. 3."

HORTUS REGIUS/MONACENSIS./..../
Hort. Reg. Monac. (3441)
1829 sem. 2 (preface 25 Jun 1829).

FLORA BRASILIENSIS/..../
Fl. Bras. (923, 1332, 1739, 4234, 4637, 5144, 7398, 8241)
15 Volumes, 1840-1906, published in parts, all dated.

PALMETUM ORBIGNIANUM
Palm. Orbign. (657)
Published in D'Orbigny, Voy. Am. Mérid. vol. 7, 1847.

Ref.: Sherborn and Woodward, Ann. Mag. Nat. Hist. ser. 7. **7**: 388. 1901.

Masters, Maxwell Tylden, 1833-1907.
(816)

Maximowicz (Ambodik), Nestor, 1740-1812.
(3316, 3332)

Mazzucato, Giovanni, 1787-1814.

VIAGGIO BOTANICO ALL'ALPI GIULIE ....
1811.

Copy consulted at British Museum, Bloomsbury, London.

Medikus, Friedrich Kasimir, 1736-1808.

BOTANISCHE/BEOBACHTUNGEN/DES JAHRES 1783./..../1784./
Bot. Beob. (7056)

THEODORA SPECIOSA/..../1786.
Theodora (1029, 1108, 1110, 3450, 3506)

UEBER EINIGE/KUENSTLICHE GESCHLECHTER/AUS DER/MALVEN-FAMILIE./....
1787.
Malven-Fam. (4709)

PHILOSOPHISCHE BOTANIK,/..../
Philos. Bot. (1285, 2194, 2858, 3693, 6994, 7151, 8241, 9147)

Heft 1, 1789; part of the material previously published in Vorl. Churpfl. Phys.-Ökon. Ges. **4**(1): 167-382 (1788).

Heft 2, 1791 sem. 1 (reviewed in Ann. Bot. Usteri **1**: 104; preface dated 1 Sep 1791).

PFLANZEN-GATTUNGEN/..../....
Pflanzen-Gatt. (2908, 2986, 2988, 3038, 3448)
Heft 1, 1792 post 12 Apr (p. 127).

Meisner, Carl Friedrich, 1800-1874.

PLANTARUM/VASCULARIUM GENERA/..../
Gen. (2208, 3575, 4011, 4623, 8237)

2 Volumes, the first often referred to as 'Tab. Diagn.', the second as 'Commentarius'. The dates of publication of the various parts were supplied by W. T. Stearn and are based on contemporary reviews; they agree essentially with those contained in an unpublished note on the book by Barnhart, in the library of The New York Botanical Garden, and with those published by v. Steenis-Kruseman.

Fasc.	Tab. Diagn.	Comm.	Dates	
1	i-iv, 1-32	1-24	Mar-Apr	1837.
2	33-68	25-48	Mai	1837.
3	69-104	49-72	Aug	1837.
4	105-136	73-100	Apr	1838.
5	137-176	101-120	Sep	1838.
6	177-220	121-136	Mar	1839.
7	221-256	137-160	Aug	1839.
8	257-284	161-192	Apr	1840.
9	285-312	193-224	Nov	1840.
10	313-344	225-252	Jul	1841.
11	345-376	263-280	Feb-Mar	1842.
12	377-408	281-308	Aug	1842.
13	409-436	309-340	Feb	1843.
14	437-442	341-402	Nov	1843.

Ref.: Stearn, Taxon **6**: 188. 1957.
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 739. 1960.

Merrill, Elmer Drew, 1876-1956.

AN INTERPRETATION OF/RUMPHIUS's HERBARIUM/AMBOINENSE/..../
Interpr. Herb. Amb. (2798)
1 Nov 1917.

Mertens, Franz Karl, 1796-1830; Koch, Wilhelm Daniel Joseph, 1771-1849.

J.C. RÖHLINGS/DEUTSCHLANDS FLORA./..../
Deutschl. Fl. (381)

Third edition of Röhling, Deutschl. Fl., in three volumes: 1, 1823; 2, 1826; 3, 1831. Mertens and Koch were the actual authors of these three volumes; Koch, after the death of Mertens, of the remaining two.

Meyen, Franz Julius Ferdinand, 1804-1840.

REISE UM DIE ERDE/..../.
Reise (3931)
Volume 1 ('Historischer Bericht') 1834 post Apr (preface dated Apr 1834).

Meyer, Carl Anton, 1795-1855.
(468b)

Meyer, Ernst Heinrich Friedrich, 1791-1858.

..../COMMENTARIORUM/DE PLANTIS/AFRICAE AUSTRALIORIS/..../
Comm. Pl. Afr. Austr. (3673, 6483, 6504)
Fasc. 1, pp. i-lvi, 1-172, 14 Feb 1836.
2, pp. lvii-lxx, 173-326, 1837.

Ref.: Kuntze, Rev. Gen. **1**: cxxxvi. 1891. Marshall, Journ. Soc. Bibliogr. Nat. Hist. **1**: 102. 1937.

Meyer, Georg Friedrich Wilhelm, 1782-1856.

PRIMITIAE/FLORAE ESSEQUEBOENSIS/ ..../
Prim. Fl. Esseq. (3998, 8473)
1818 sero vel Jan 1819.

The preface is dated Sep 1818, the book, published in Göttingen, was reviewed in the Gött. Gelehrte Anz. on 30 Jan 1819.

Michaux, André, 1746-1802.

FLORA/BOREALI-AMERICANA,/..../
Fl. Bor.-Am. (171, 492, 2570, 2656, 3710, 6277, 7317, 7549, 7908, 8629, 8826)
19 Mar 1803.

Ref.: Kuntze, Rev. Gen. **1**: cxxxvi. 1891. Schubert, Rhodora **44**: 149. 1942. Sayre, Dates of Publications 15. 1959.

Mieg, Achilles, 1731-1799.
(194)

Miers, John, 1789-1879.

TRAVELS/IN/CHILE AND LA PLATA,/ ..../
Trav. (8158)
2 Volumes, 1826.

Mikan, Johann Christian, 1769-1844.

DELECTUS/FLORAE ET FAUNAE/ BRASILIENSIS/..../
Del. Fl. Faun. Bras. (909, 9490)

Part	Plates		Dates
1	*1-6*		1820, sero.
2	*7-11a*		1822, medio.
3	*12-17*	Jul-Oct	1823.
4	*18-23*		1825.

Ref.: Stearn, Journ. Soc. Bibliogr. Nat. Hist. **3**: 135. 1956.

Miller, Phillip, 1691-1771.

THE/Gardeners/Dictionary./..../Abridged from the last Folio Edition,/..../ M.DCC.LIV.
Gard. Dict. Abr. ed. 4. (21 references)
In three volumes; 1754.

The pages are unnumbered, names of genera and other subjects are alphabetically arranged.

THE/GARDENERS DICTIONARY:/..../
Gard. Dict. ed. 7. (1315), ed. 8. (numerous references)
Ed. 7, 1759, ed. 8, 1768.

FIGURES/OF THE MOST BEAUTIFUL, USEFUL, AND UNCOMMON/PLANTS /..../
Fig. Pl. (1265, 2663)
25 Mar 1755-30 Jun 1760.

The plates are all dated: *1*, 25 Mar 1755; *300*, 30 Jun 1760. In an advertisement printed in Gard. Dict. ed. 7, dated 31 Mar 1759, it is stated that the book had been published in monthly numbers containing six plates each, beginning 25 Mar 1755. The dates on the plates are not necessarily those of publication, but it may be assumed that the difference was not considerable. The British copyright acts required this dating of the plates. They were really intended to be the dates of actual issue to the public (see Stearn). The 1771 edition of this book differs only in the title page.

Ref.: Stearn, Journ. Bot. **78**: 67. 1940. Rhodora **45**: 511. 1943 (re dates on plates in general).

Miller, John Frederick, fl. 1772-1794.

ICONES ANIMALIUM ET PLANTARUM
Ic. Anim. Pl. (4120)

60 Plates, 1776-1785. The copy consulted by us at the British Museum (Nat. Hist.) had no title page.

Part	Plates	Dates
1	*1-6*	1776 (1).
2	*7-12*	1776.
3	*13-18*	1777.
4	*19-24*	1777 vel 1778.
5	*25-30*	1779 vel 1780.
6	*31-36*	1782 (2).
7	*37-42*	1782.
8	*43-48*	1783.
9	*49-54*	1784.
10	*55-60*	1785 (3).

(1) Plate *1* dated 10 Mar 1776.
(2) Plate *36* dated 16 Mai 1782.
(3) Known as yet only from the 1796 'reprint' in the *Cimelia Physica.*

Ref.: Britten, Journ. Bot. **51**: 255. 1913. Sherborn and Iredale, Ibis ser. 11. **3**: 302. 1921.

Miquel, Friedrich Anton Wilhelm, 1811-1871.

COMMENTARII PHYTOGRAPHICI,/..../
Comm. Phytogr. (468b, 5632, 5648)
1, 1839; 2, 1840; 3, 1840.

FLORA/INDIAE BATAVAE,/..../
SUPPLEMENTUM PRIMUM./
PRODROMUS FLORAE
SUMATRANAE./..../
Fl. Ind. Bat. Suppl. (4264)

Part	Pages	Plates	Dates
1	i-xx	*1-2*	1860.
	1-160		
2	161-336	*3*	1861.
3	xxi-xxiv	*4*	1861.
	337-656		

Ref.: v. Steenis, Fl. Males. Bull. **2**: 363. 1953. v. Steenis-Kruseman, Fl. Males. **4**(5): ccii. 1954.

Mirbel, Charles François Brisseau, 1776-1854.
(6772)

Mitchell, John, -1768.

..../DISSERTATIO BREVIS/DE/
PRINCIPIIS/BOTANICORVM/ET/
ZOOLOGORVM/..../MDCCLXIX./
Diss. Brev. Bot. Zool. (7022)
1769, reprint from Acta Acad. Leop.-Carol. **8** Append.: 187-224. 1748.

Moench, Conrad, 1744-1805.

METHODUS/PLANTAS/HORTI BOTANICI
ET AGRI/MARBURGENSIS,/..../
Meth. (17 references)
1794.

..../SUPPLEMENTUM/AD/METHODUM
PLANTAS/..../
Meth. Suppl. (228, 312, 962, 3868, 7151, 7312, 8916)
1802, ante Oct.

Rev.: Journ. Gén. Lit. Étr. **3**(2): 53. Oct-Nov 1802.

Molina, Juan Ignacio, 1737-1829.

SAGGIO/SULLA STORIA NATURALE
DEL CHILI/..../SECONDA
EDIZIONE/..../
Saggio Chili ed. 2. (2120, 2759, 7299)
1810.

Montagne, Jean Pierre François Camille, 1784-1866.
(7835)

Montin, Lars Jonasson, 1723-1785.
(7914)

Moore, Spencer Le Marchant, 1850-1931.
(9405)

Moricand, Stefano [Moïse Étienne], 1779-1854.

PLANTES/NOUVELLES/D'AMÉRIQUE
/..../
Pl. Nouv. Amér. 156 (8097)
Livr. 1 was reprinted from Mém. Soc. Genève **6**: 529-536 (1833); livr. 2 from **7**: 249-264 (1836). All the remainder was issued as an independent publication. Livr. 1 was dated 1833 and livr. 2, 1836, but they were set up from fresh type and probably appeared together (in this form) in 1836. They were reviewed as the *first* part in Linnaea **11** (Lit.-Ber.): 186 (1837).
All the livraisons were enumerated, with the plates and dates of each, in the preface of the completed work.

Livr.	Pages	Plates	Dates
1	1-8	*1-6*	1833.
2	9-24	*7-16*	1836.
3	25-40	*17-26*	1837.
4	41-56	*27-38*	1838.
5	57-76	*39-50*	1839.
6	77-96	*51-60*	1840.
7	97-116	*61-70*	1841.
8	117-140	*71-84*	ante Sep 1844.
9	141-176, i-iv	*85-100*	1847 sem. 1 ('1846').

The original paper cover of each livraison bore the title: "Plantes nouvelles ou rares de l'Amérique." The number of the livraisons, the numbers of the plates contained in it, and the year-date, were filled in by hand. Livr. 4 was reviewed in Linnaea **12** (Lit.-Ber.): 186 (1838) as of '1837'.
Livr. 8 was reviewed in Bot. Zeit. **2**: 615. (30 Aug 1844), livr. 9 ibid **5**: 475. (2 Jul 1847). The preface is dated 30 Dec 1846. If the ninth part was published at the same time, as suggested by Barnhart, its date is 1847.
Ref.: unpublished memoir by Barnhart at The New York Botanical Garden.

Mössler, Johann Christoph (or Christian?).

GEMEINNÜTZIGES/HANDBUCH/DER
GEWÄCHSKUNDE,/..../
Handb. (6191)
Ed. 2, Vol. 1, 1828 sem. 2 (preface dated 1 Jul 1828).
Ed. 1, 2 Vols., 1815; ed. 2, 3 Vols., 1827-29 edited by H. G. L. Reichenbach.

Mueller, Ferdinand Jacob Heinrich von, 1825-1896.

FRAGMENTA PHYTOGRAPHIAE/ AUSTRALIAE,/..../

Fragm. (1258, 6382, 6408)

11 Volumes, 1858-1881, published in 93 parts, dated on last page of each part.

Murray, Johan Andreas, 1740-1791.

CAROLI A LINNÉ/..../SYSTEMA/ VEGETABILIUM/..../....

Syst. Veg. (2035, 3524, 4090, 8716)

1774 trim. 2. (preface dated Easter 1774, rev. Gött. Gelehrte Anz. 1774: 673. Jul prim. 1774).

Ref.: Soulsby, Catalogue no. 573. 1933.

Mussche, Jean Henri, 1765-1834.

HORTUS GANDAVENSIS/..../JUIN 1817. /..../

Hort. Gand. (8852)

Naudin, Charles Victor, 1815-1899.

(5665, 8808)

Necker, Noël Joseph de, 1729-1793.

..../DELICIAE/GALLO-BELGICAE /..../

Delic. (8926)

2 Volumes, 1768, paged consecutively. A second edition from 1773 differs only in the title page.

..../ELEMENTA/BOTANICA,/..../

Elem. (23 references)

3 Volumes, 1790. A reprint was issued in Germany in the course of the summer of 1791.

The names of the "Species Naturales" in this book are the equivalents of ordinary generic names. Since, however, they were published as "species" they are not to be taken into consideration as generic names. Many of these Necker names were validated later as ordinary generic names by various authors.

Rev.: Journ. Phys. Chim. Hist. Nat. Arts **38**: 70. Jan 1791 (ed. 1).
Gött. Gelehrte Anz. 13 Oct 1791 (ed. 2).

Nees von Esenbeck, Christian Gottfried Daniel, 1776-1858.

GENERA ET SPECIES/ASTEREARUM. /..../

Gen. Sp. Aster. (8898, 8919)

1832 sem. 2 (last date in volume: 1 Jul 1832), reprinted 1833.

Ref.: v. Steenis-Kruseman, Fl. Males. Bull. **3**: 644. 1959.

Nestler, Christian Gottfried, 1778-1832.

MONOGRAPHIA/DE POTENTILLA/..../

Mon. Potent. (3377)

1816 sem. 1.

Rev.: Journ. Gén. Lit. Fr. Jul 1816.

Nuttall, Thomas, 1786-1859.

THE/GENERA/OF/NORTH AMERICAN PLANTS,/..../

Gen. (708, 1882, 1918, 2339, 2566, 3722, 5471, 6200, 7792, 9215, 9241)

2 Volumes, end of Mai 1818.

Ref.: Barnhart, Bull. Torrey Club **24**: 409. 1897.
Kuntze, Rev. Gen. **3**(2): 160. 1898.

Oeder, Georg Christian, 1728-1791.

ICONES PLANTARUM/..../FLORAE DANICAE/....

Fl. Dan. (6189)

Fasc. 1, 1761.

Oersted, Anders Sandoe, 1816-1872.

(594, 1893, 3745)

Oliver, Daniel, 1830-1916.

FLORA/OF/TROPICAL AFRICA./..../

Fl. Trop. Afr. (8397)

3 Volumes, 1868-1877.

Olivi, Giuseppe, 1769-1795.

ZOOLOGIA ADRIATICA/..../

Zool. Adriat. (374)

Registered 30 Apr and 10 Mai 1792; dedication dated 30 Aug 1792. p. 297 cites a work publ. in 1792.

1792 quadrim. 3.

Orbigny, Alcide Charles Victor Dessalines d', 1802-1857.

VOYAGE/DANS/L'AMÉRIQUE MÉRIDIONALE/....

Voy. Amér. Mérid. (6670)

Vol. 8, Atlas, Botanique [1], 1839(?).

Ortega, see **Gomez Ortega.**

(to be continued)

REPORT OF THE COMMITTEE FOR SPERMATOPHYTA

CONSERVATION OF GENERIC NAMES III

H. W. Rickett, Secretary (New York)

H. W. Rickett, Secretary (New York)

The composition of the Committee was changed slightly at the Montreal Congress (1959). The method of study and voting was continued unchanged. The members of the present Committee are as follows:

A. R. Pinto da Silva (Portugal), Chairman
A. A. Bullock (Great Britain)
G. Cufodontis (Australia)
F. R. Fosberg (U.S.A.)
H. Hara (Japan)
R. D. Meikle (Great Britain)
Y. I. Prokhanov (U.S.S.R.)
W. Rothmaler (Germany)
A. C. Smith (U.S.A.)
C. G. G. J. van Steenis (Netherlands)
H. W. Rickett (U.S.A.), Secretary

As in previous reports, the votes for and against each proposal considered are shown in parenthesis immediately after the names involved; the affirmative votes precede the negative. Eight affirmative votes were required for a recommendation by the Committee to accept a proposal.

22. **Agathis** R. A. Salisbury (1807) vs. *Dammara* Lamarck (1786) (0-11) Taxon **4**: 195. 1955).

A proposal was made to remove *Agathis* from nomina conservanda on the ground that its taxonomic synonym *Dammara* was not validly published. Study by the Committee cast some doubt on the latter contention. Lamarck's text was characterized as "extremely vague and... only most charitably" acceptable as a generic description. This, however, is true of many older descriptions that have been accepted as constituting valid publication. The vote by the Committee reflects its feeling that retention of *Agathis* in the list of conserved names will avoid the consequences of future doubts on the nomenclatural status of *Dammara.*

417. **Phyllostachys** Siebold & Zuccarini (Taxon **6**: 156. 1957).

A proposal was made to add *Sinoarundinaria* Ohwi (1931) to the list of rejected names under *Phyllostachys* nom. cons. As indicated in the Paris edition of the Code, conservation of *Phyllostachys* was unnecessary; it stands without conservation and has priority over *Sinoarundinaria.* No action was necessary and none was taken by the Committee except to verify the facts. (Cf. Taxon **8**: 227. 1959.)

424. **Bambusa** Schreber.

In a letter to H. W. Rickett, R. E. Holttum points out errors in the report by the former published in Taxon **7**: 189 (1958). He writes that the statement that *B. vulgaris* H. A. Schrader is taxonomically the same as *B. arundinacea* Retzius "is not true, and it is also untrue that the name *B. arundinacea* has been traditionally misapplied."

The confusion arose over the publication of two articles on the typification of *Bambusa* (Taxon **5**: 26-28; 65-67), the second of which substantially modified the conclusions reached in the first. The action of the Committee recommended conservation of *Bambusa* Schreber with *B. arundinacea* as type. Through the discovery of a type specimen this is now shown to apply to the species that has generally been so named and *B. vulgaris* is the common species generally so designated. No further action was necessary except to point out the errors in the previous statement.

639. **Veitchia** H. Wendland (1868) (11-0) (Taxon **7**: 83. 1958).

A change of type was proposed for this c nserved name. No type was designated in the original publication. The type listed in the *Code, V. storckii* H. Wendland, was removed from *Veitchia* by Beccari in 1921, becoming the type of a new genus, *Neoveitchia.* Subsequently, the same species was chosen as the type of *Veitchia,* which would reduce *Neoveitchia* to synonymy under *Veitchia* and make a new generic name necessary for the species now included in *Veitchia.* A proposal was made by Pichi-Sermolli in 1955 to adopt *V. joannis* H. Wendland as the type; in this he was followed by A. C. Smith in 1955 and by H. E. Moore in the present proposal. The Committee voted to recommend the change of type.

2691. **Enneastemon** Exell (1932) vs. *Clathrospermum* Planchon ex Bentham (1862) (8-3) (Taxon **8**: 30. 1959).

The proposal to conserve *Enneastemon* was rejected by the previous Committee (Taxon **7**: 188. 1958), largely under a misapprehension. It appeared that rejection of *Clathrospermum* was proposed because of the difficulty in typifying it; not a good and sufficient reason. The real basis of the proposal, not clearly brought out by the proposer, was the desirability of maintaining a uniform nomenclature in works on the flora of tropical Africa. Four such works, recently published, have adopted *Enneastemon*. Other works are in preparation. (Those who work on this flora cooperate through the Association pour l'Étude Taxonomique de la Flore de l'Afrique Tropicale.) The Committee was therefore asked to reconsider the proposal, and recommends conservation of *Enneastemon*.

2783. **Persea** P. Miller (1754).

In the *Rules* published in 1952, after the Stockholm Congress, *Persea* was ascribed to Gaertner in 1805, and listed as conserved over *Farnesia* Heister (1763). *Persea*, however, was validly published by Miller in 1754; conservation is therefore superfluous. A proposal was made to delete the name from nomina conservanda (Taxon **3**: 64, 65. 1954). The proposal was not put to a vote since the facts are not in dispute. The Editorial Committee is invited to indicate that the conservation of *Persea* is superfluous.

3424. **Rourea** Aublet (1775) vs. *Kalawael* Adanson (1763) (11-0) (Taxon **7**: 143. 1958).

Rourea is now maintained as distinct from *Santaloides* Schellenberg (1910). The latter name has been conserved over its earlier homonym *Santalodes* Kuntze (1891) and its nomenclatural synonym *Kalawael* Adanson (1763). If, however, *Rourea* and *Santaloides* should be re-united, the earlier of the competing names would be correct, regardless of conservation (Art. 14). This would mean that *Kalawael* Adanson would be the name of the combined genus, and many specific names would be changed. The proposal, accepted by the Committee, avoids this result; in the event of union, the name of the genus would be *Rourea*.

3528. **Piliostigma** Hochstetter (1846) vs. *Elayuna* Rafinesque (1838) (7-4).

The genus is said to be widespread in tropical Africa and of ecological importance. Rafinesque's name has never been used. However, the genus is small; the Committee was not sufficiently convinced that the creation of three new combinations would inconvenience many persons.

3753. **Clianthus** Solander (1835) vs. *Sarcodum* Loureiro (1790) (9-2) (Taxon **5**: 81. 1956).

Clianthus has already been conserved over *Donia* G. Don (1832). The latter name, however, is illegitimate (see Taxon **8**: 293), and the conservation was superfluous. Now it is shown that *Sarcodum* is an earlier synonym. The proposal is to maintain *Clianthus* as a nomen conservandum by adding *Sarcodum* to the nomina rejicienda. The vote of the Committee expresses its feeling that though the genus is small the name *Clianthus* is widely used, and that since it has been once conserved it would be confusing to replace it now.

3830. **Hymenolobium** Bentham (1860) vs. *Hymenolobium* Bentham ex C. F. P. Martius (1837) (2-9) (Taxon **7**: 141. 1958).

Upon investigation by the Committee, *Hymenolobium* Bentham ex C. F. P. Martius was found not to have been validly published in 1837. Since Bentham was not naming a new species but transferring an already known species to a new monotypic genus, Art. 41 does not apply, and since he did not describe the genus, the name is a nomen nudum. Conservation of *Hymenolobium* Bentham (1860) is therefore superfluous (as far as this proposal is concerned), and the proposal was rejected by the Committee.

(sub 3899). **Moghania** Jaume Saint-Hilaire (Feb 1813) vs. *Lourea* Jaume Saint-Hilaire (1812) (5-6) (Taxon **8**: 29. 1959).

The divided vote reflects some uncertainty over the correctness of the proposal. It was pointed out that *Moghania* is a "later and incorrect spelling of *Maughania* Jaume Saint-Hilaire (1813), named after Robert Maughan." There are, however, several examples of the conservation of a later spelling. Unless a new proposal is made and accepted, it will be necessary to transfer the 40-odd species of *Moghania* (*Maughania*) to *Lourea*.

4606. **Juliania** Schlechtendahl (1843) vs. *Juliania* La Llave (1825) (7-4) (Taxon **6**: 234. 1957).

The name *Juliania* was given by Schlechtendahl to his genus since *Juliania* La Llave

was recognized to be a synonym of *Choisya* Humboldt, Bonpland & Kunth (1823). Though *Juliania* Schlechtendahl has been widely used, a substitute name, *Amphipterygium,* was published by Standley in 1923, who also made all the necessary combinations. Because of the latter fact, the proposal failed of the necessary votes for acceptance.

4648. **Rhacoma** Linnaeus (1759) vs. *Crossopetalum* P. Browne (1756) (7-4) (Taxon **8**: 25. 1959).

Linnaeus adopted Browne's genus but changed the name; and Linnaeus' name came into general use. Several recent authors have revived *Crossopetalum,* and the necessary combinations have apparently been made. Although rejection of *Rhacoma* and adoption of *Crossopetalum* may annoy many botanists who are not taxonomists, and others who use botanical names, an insufficient number of votes was received to conserve *Rhacoma.*

5215. **Hopea** Roxburgh (1819) vs. *Hopea* Garden ex Linnaeus (1767), *Hopea* Vahl (1805), *Neisandra* Rafinesque (1838), *Petalandra* Hasskarl (1858) (11-0) (Taxon **8**: 26. 1959).

This genus of about 120 species, many of which are important timber trees, has almost always been known by Roxburgh's name. *Hopea* Garden has never been in use. (The later synonyms need not, of course, be included among the rejected names.) Should *Hopea* Roxburgh not be conserved, about 120 new combinations with *Neisandra* would be necessary. The Committee accordingly recommends conservation as proposed.

5331. **Idesia** Maximowicz (1866) vs. *Idesia* Scopoli (1777) (5-6) (Taxon **8**: 24. 1959).

The divided vote (which results in rejection of the proposal by the Committee) reflects on the one hand the universal usage of *Idesia* Maximowicz and on the other a reluctance to conserve the name of such a small genus. *Idesia* as defined by Maximowicz has been used in all important works from that of Bentham and Hooker to modern times, while Scopoli's name has never been used. However, the validly published name *Polycarpa* may be used instead of the later homonym.

6790. **Woodsia** R. Brown (1815) vs. *Woodia* R. Brown (1810) (Taxon **3**: 128, 129. 1954).

Study by the Committee showed that Brown in his later publication was correcting an orthographic error in his original description; he made it plain that the genus was named for Mr. Joseph Woods. No action by this Committee is necessary or even proper since *Woodsia* is a genus of ferns. However, if the judgment of the Committee is correct, "*Woodia*" R. Brown does not make *Woodia* Schlechter (1894) illegitimate.

6914. **Dregea** E. Meyer (1837) vs. *Dregea* Ecklon & Zeyher (1837) (10-1) (Taxon **8**: 23. 1959).

Dregea Ecklon & Zeyher has always been regarded as a synonym of *Peucedanum* Linnaeus (1753). *Dregea* E. Meyer is in general use for a genus of about 15 species ranging from South Africa to southeastern Asia. The only other available name is *Pterophora* W. H. Harvey (1838), which has never been used and with which no combinations have been made. Stapf and N. E. Brown misinterpreted the type as belonging to *Marsdenia.* Conservation would seem conducive to stability of nomenclature and is recommended by the Committee.

7012. **Cobaea** Cavanilles (1791) vs. *Cobaea* Necker (1790) (Taxon **6**: 235. 1957).

Since by the action of the Ninth Congress at Montreal Necker's "species naturales" were not validly published generic names, conservation is superfluous. No action is recommended.

7604. **Gerardia** Bentham (1835) vs. *Gerardia* Linnaeus (1753) (4-7) (Taxon **8**: 28. 1959).

Gerardia Linnaeus was typified in 1810 by *G. tuberosa.* This was found to belong to *Stenandrium* nom. cons. (Taxon **7**: 192. 1958). Conservation of *Gerardia* Bentham would render *Gerardia* Linnaeus unavailable, so that *Stenandrium* would stand without conservation. However, conservation of *Gerardia* Bentham is unnecessary since *Agalinis* Rafinesque has come into general use for this taxon and presumably all necessary combinations have been made. Accordingly, the Committee rejects the proposal.

(sub 7604). **Agalinis** Rafinesque (1837) vs. *Chytra* K. F. Gaertner (1805) (11-0) (Taxon **7**: 142. 1958).

The name *Agalinis* is in general use, while *Chytra* has never been taken up. While there is some doubt of the typification of *Chytra,*

it seems reasonably certain that *C. anomala* K. F. Gaertner is a synonym of *Agalinis tenuifolia* (Vahl) Rafinesque. Some 60 new combinations would be required if *Chytra* were now adopted. Since *Gerardia* is unavailable because of *Gerardia* Linnaeus, there is no other obstacle to the use of *Agalinis*. The Committee recommends conservation of the latter name.

7631. **Castilleia** Mutis ex Linnaeus (1781) vs. *Bartsia* Linnaeus (1753) (0-11) (Taxon **7**: 83. 1958).

To have accepted the proposal to conserve *Castilleia* over *Bartsia* would have rendered the later use of *Bartsia* illegitimate (see below). The maintenance of *Castilleia* in the current sense is accomplished by the proposal to conserve *Bartsia* "Bentham."

7645. **Bartsia** Bentham (1846) vs. *Bartsia* Linnaeus (1754) (11-0) (Taxon **7**: 143. 1958).

There is, strictly speaking, no such name as "*Bartsia* Bentham." *Bartsia* Linnaeus was typified by *B. coccinea* Linnaeus, which is what we currently call *Castilleia*. The vote to recommend acceptance of the proposal was actually a vote to change the type of *Bartsia* to *B. alpina* Linnaeus; this action would enable us to maintain both generic names in their current sense and to avoid some 250 changes of names.

8428. **Gaertnera** Lamarck (1791) vs. *Gaertnera* Schreber (1789), *Gaertnera* Retzius (1791), *Gaertneria* Medikus (1789), *Gaertneria* Necker (1790) (11-0) (Taxon **7**: 233. 1958).

Gaertnera Lamarck was published on a plate without analyses in 1791; the corresponding text did not appear until 1819. This makes *Gaertnera* Retzius undoubtedly an earlier homonym, together with *Gaertnera* Schreber. *Gaertneria* Necker no longer has any nomenclatural status. If *Gaertneria* Medikus is treated as a homonym of *Gaertnera*, conservation of *Franseria* may be superfluous. We do not know, however, whether *Gaertneria* Medikus was published before or after *Gaertneria* Schreber.

Gaertnera Lamarck has been universally accepted for about 55 species of Old-World tropics. There is a validly published substitute name, *Sykesia* Arnott (1836), but only three combinations have been made with it. The Committee recommends acceptance of the proposal.

8598. **Citrullus** Schrader (1836) vs. *Colocynthis* P. Miller (1754) (9-2 for no action) (Taxon **5**: 38. 1956).

Citrullus Schrader (1836) appears in the Code as conserved over *Anguria* P. Miller (1754), *Colocynthis* Ludwig (1757), and *Citrullus* Necker (1790). The proposal is to add *Colocynthis* P. Miller (1754) to the nomina rejicienda. In their revision of the list of conserved names Rickett and Stafleu interpreted *Colocynthis* Ludwig as simply a later application of *Colocynthis* P. Miller, and changed the authority and date accordingly. The Committee voted that this interpretation was correct and that this proposal was therefore unnecessary.

9343. **Allardia** Decaisne ex Endlicher (1843) vs. *Waldheimia* Karelin & Kiriloff (1842) (1-10) (Taxon **7**: 233. 1958).

There is considerable doubt about the actual date of *Allardia;* Endlicher himself cites Jacquemont's *Voyage* as the place of publication, and Reichenbach is said to have used the name as early as 1841. The dates of Jacquemont's *Voyage* (which appeared in parts) are themselves doubtful; from a contemporary notice it is probable that the part containing *Allardia* had appeared by 1843. Conservation would at least avoid the possibility of conflicting opinions over the priority of the two names involved.

On the other hand, the genus is small, with no economic importance, and all or at least most of the necessary nomenclatural transfers have been made. Recent authors have generally adopted *Waldheimia*. For these reasons the Committee rejects the proposal.

9712. **Heteropyxis** W. H. Harvey (1863) vs. *Heteropyxis* W. Griffith (1854) (10-1) (Taxon **6**: 58. 1959).

Heteropyxis W. Griffith was found to be congeneric with *Boschia* Korthals (1844); the earlier of these names has been maintained in use. Under the practice of the time, Harvey felt justified in using the name *Heteropyxis* for the new genus he described in 1863. No other name is available. The genus is small, but ecologically important in southeastern Africa. The name *Heteropyxis* has been used continuously. The Committee therefore recommends the proposed conservation.

Microchaete Thuret (1887) vs. *Microchaete* Bentham (1845), *Microchaeta* Reichenbach

(1841), *Microchaeta* Nuttall (1841), *Coleospermum* Kirchner in Cohn (1878) (2-9).

Some time ago the previous Committee for Spermatophyta was asked to vote on the possible undesirability of conserving the algal name *Microchaete*. Curiously, the conservation has already been effected over *Microchaete* Bentham (p. 199 of the Code, 1956 ed.) As far as the Committee has been able to determine, rejection of the latter will not inconvenience students of flowering plants. *Microchaeta* has been considered a different name by the Committee for Algae; but in any case rejection of this name also would seem to introduce no problems. Accordingly, the Committee voted that it had no objection to conservation of *Microchaete* Thuret.

SUMMARY

Conservation of the following generic names is recommended as proposed: 2691 *Enneastemon* Exell; 3424 *Rourea* Aublet; 3753 *Clianthus* Solander; 5215 *Hopea* Roxburgh; 6914 *Dregea* E. Meyer; sub 7604 *Agalinis* Rafinesque; 7645 *Bartsia* Linnaeus sensu Bentham; 8428 *Gaertnera* Lamarck; 9712 *Heteropyxis* W. H. Harvey.

It is also recommended that 22 *Agathis* R. A. Salisbury and 3753 *Clianthus* Solander be maintained as nomina conservanda (the latter by adding *Sarcodum* Loureiro to nomina rejicienda).

The Committee recommends rejection of the proposals to conserve the following names: 3528 *Piliostigma* Hochstetter; 3830 *Hymenolobium* Bentham (which stands without conservation); sub 3899 *Moghania* Jaume Saint-Hilaire; 4606 *Juliania* Schlechtendahl; 4648 *Rhacoma* Linnaeus; 5331 *Idesia* Maximowicz; 7604 *Gerardia* "Bentham"; 7631 *Castilleia* Mutis ex Linnaeus (which stands because of recommended retention of *Bartsia* Linnaeus sensu Bentham); 9343 *Allardia* Decaisne ex Endlicher.

The Committee recommends that *Veitchia joannis* H. Wendland be designated the type of *Veitchia* instead of *V. storckii*.

In the view of the Committee no action is necessary to add *Colocynthis* P. Miller to nomina rejicienda in favor of *Citrullus*.

The Committee finds no obstacle among names of flowering plants to the conservation of the algal genus *Microchaete*.

NEWS AND NOTES

ANTONIO PONCE DE LEÓN 1887-1961

We announce with deep regret the death of Professor Dr. Antonio Ponce de León y Aymé at Havanna, 22 February 1961. Dr. Ponce de León, who was born on 23 January 1887, was one of the staunchest supporters of our Association from the beginning. He was an acknowledged authority on the Cycadaceae and on botanical nomenclature. We hope to publish an appreciation in a coming number of Taxon.

INTERNATIONAL PHYCOLOGICAL SOCIETY

The International Phycological Society came into being January 1, 1961, under the guidance of an Executive Council whose members had previously served as an organizing committee. Jean Feldmann, Professor at the Sorbonne, was elected President, and the first general meeting will be held in conjunction with the Fourth International Seaweed Symposium at Biarritz, September 18-25, 1961. The initial call for members has already resulted in a roll of more than 300 individuals and organizations.

During the past decade the rapid development of phycology has warranted consideration of this field as a major subdivision of biology. The number of books and articles that deal directly and at least partly with algae has increased geometrically. Recognition of this growth of phycology was made in 1954 by the establishment of a special section at the Eighth International Botanical Congress at Paris. So successful was this section that it was again organized at Montreal in 1959.

National societies have been established in the United States (1946), Great Britain (1952), Japan (1952), France (1955), Czechoslovakia (1955), Philippines (1956), and India (1959). After giving careful consideration to many factors during a period of several years, the organizing committee, composed of T. Braarud, T. Christensen, J. Feldmann, G. E. Fogg, B. Fott, J. Gerloff, M. O. P. Iyengar, J. Th. Koster, P. C. Silva (Chairman), Y.

Yamada, and A. D. Zinova, concluded that there was a need for an international society and that the present time was favorable to its establishment.

The purposes of the International Phycological Society are to promote the study of algae, to facilitate dissemination of information about algae, and to bring about international cooperation among phycologists. The chief instrument proposed to enable the Society to carry out these objectives is the Society's journal PHYCOLOGIA, which will be issued quarterly under the editorship of P. C. Silva assisted by T. Christensen. PHYCOLOGIA will publish the results of original research as well as reviews on all aspects of phycology. It will publish comprehensive annual bibliographies and lists of new taxa and nomenclatural changes. It will also disseminate information about phycological projects and phycologists that should prove helpful and encouraging to workers throughout the world.

Annual dues have been set at one English pound ($ 2.80), organizational memberships and institutional subscriptions at two pounds ($ 5.60). Requests for membership applications, subscription orders, inquiries, and all other correspondence should be addressed to the International Phycological Society, Department of Botany, University of California, Berkeley 4, California, U.S.A.

Dr. OLAF HAGERUP 1889-1961

Dr. Olaf Hagerup, the well-known Danish botanist, died in Copenhagen in the course of March 1961. We hope to publish an obituary notice in a coming number of Taxon.

BOTANISCHES MUSEUM BERLIN-DAHLEM

Die Direktion des Botanischen Gartens und Museums Berlin-Dahlem hat am 1. März 1961 Herr Dr. Walter Domke, der bisher in Hamburg tätig war, übernommen.

UNIVERSITY OF EDINBURGH: PLANT TAXONOMY

A vacation course in the practice of plant taxonomy, including a taxonomic revision, will be given at Edinburgh from August 28th. — September 8th. The course is designed for graduate and post-graduate students. For particulars apply to Dr. P. H. Davis, University department of Botany, Royal Botanic Garden, Edinburgh 3.

TREES AND SHRUBS OF MEXICO

The Smithsonian Institution is reprinting Paul C. Standley's *Trees and Shrubs of Mexico,* Contr. U.S. National Herbarium, vol. 23, 1920-26, Parts 1 (pp. xviii + 1-169), 2 (xxxvii + 171-515), 3 (pp. xxviii + 517-848), and 5 (ii + 1313-1721), in 2 paper-bound volumes containing pts. 1-3 and pt. 5, respectively. The price of these 4 parts is $ 20,— postpaid. Part 4 (pp. xxxix + 849-1312), which is available in the original 1924 edition published by the U.S. National Museum, will be enclosed free of charge.

Orders should be accompanied by check and should be addressed to:

Publications Distribution Section
Smithsonian Institution
Washington 25, D.C.

TYPE COLLECTIONS OF ALGAE

Additions

(for previous lists see Taxon 6(2): 49-54. 1957; 7(3): 81-82. 1958; 8(3): 108. 1959; 9(3): 90. 1960).

Bauer, G. H. (1794-1888) — Berlin-Dahlem, Bot. Mus. (B); Hamburg, Germany, Staatsinst. allgem. Bot. & Bot. Gart. (HBG); Leiden, Netherlands, Rijksherb. (L.).

Brand, F. — Vienna, Mus. Nat. Hist. (W).

Crouan, P. L. (1778-1871) & Crouan, H. M. (1802-1871) — Paris, Mus. Nat. Hist (PC), in herb. Thuret-Bornet.

Debray, F. — Lund, Sweden, Bot. Mus. & Herb. (LD).

Ellis, J. (? 1710-1776) — Considered lost.

Frauenfeld, G. — Vienna, Mus. Nat. Hist. (W).

Gayral, P. — Rabat, Morocco, Lab. de Bot., Fac. Sci., Avenue Biarnay (RAU).

Hepp, Ph. — Genève, Conserv. et Jard. bot. (G).

Hofmann-Bang, N. — Copenhagen, Bot. Mus. (C).

Kalchbrenner — Vienna, Mus. Nat. Hist. (W).

Kuntze, O. — New York, Bot. Gard. (NY).

Liebmann, F. — Copenhagen, Bot. Mus. (C).

Liechtenstern, von — Vienna, Mus. Nat. Hist. (W).

Oersted, A. S. — Copenhagen, Bot. Mus. (C).

Royen, A. van (1704-1779) & Royen, D. van (1727-1799) — Leiden, Netherlands, Rijksherb. (L).

Sauter, A. — Vienna, Mus. Nat. Hist. (W).

Most of these additions were received from Dr. F. Drouet. Also Dr. J. Feldmann, C. van den Hoek, and Dr. J. Gerloff procured information.

Joséphine Th. Koster (Leiden)

MEMBERSHIP FEES

Members are requested to pay their membership fees to the regional treasurers.

Members in countries without regional treasurers are requested to make payable their subscriptions to *Messrs Vlaer & Kol, Utrecht, Netherlands,* crossed: *"a.c. International Bureau for Plant Taxonomy".*

A. Individual Persons	**$**	**£**	**D.fl.**	**Sw.Kr.**
Regular Members	3.—	1.1.—	11.40	15.60
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Payment can be made in any currency; remittances in other currencies than those listed above are accepted against the exchange rates of the day of payment.

OFFICE

The International Bureau for Plant Taxonomy and Nomenclature, 106 Lange Nieuwstraat, Utrecht — Netherlands.

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LIVING TYPES

R. E. Buchanan (Ames, Iowa)

The Nomenclature Section of the IX International Botanical Congress considered the definite recognition of "living specimens as nomenclatural types." Dr. Stafleu reported (p. 106) the results of a poll of the members of the several Nomenclature Committees on the question "are you or are you not in favour of designating living specimens as nomenclatural types." This poll was the result of a directive from the Paris Congress. The results of the questionnaire seem to require some comment from the point of view of botany as a discipline and more particularly relative to their implications in microbiology. The first statement of the report reads:

"Committee for Spermatophyta: unanimously opposed to having living specimens as types."

The only reasonable interpretation is that a type specimen to be recognized as such must be *dead* even though derived in most cases from living material. The statement as given is quite unrealistic, in some respects quite inconsistent with actual findings. There are many herbarium specimens that are acceptable as types which are living in whole or in part. The statement quite ignores dormancy: Must a desert plant highly resistant to extreme desiccation be refused acceptance as a type until after it has been definitely killed? The seeds of many *Spermatophyta* remain viable for long periods of time. In fact, the identity (or non-identity) of two species described and named as distinct has been determined by the morphology of the plants grown from seed removed from herbarium specimens. It seems illogical to equate dormancy with death. Certainly a new look should be taken at the phraseology of this statement that the evident ambiguity may be corrected.

"Committee for Pteridophyta" and "Committee for Bryophyta" — "same answer and recommendation."

The same comment applies. The statement is not factually true, and should be revised. To assume that all *Lycopodia* and mosses and the spores of type specimens in our herbaria must be dead is not always in accord with the facts. Consideration of these Committee statements seems to indicate that what is really intended is not "non-living" but some such phrase as "dried or otherwise preserved in such condition as to be prevented from showing ordinary signs of growth."

"Committee for Algae" likewise "unanimously in favour of an article forbidding living types."

However, it is pointed out that typification can be by a preserved specimen or alternatively by an illustration, a description or a combination of the two. Many algae are regularly preserved by desiccation. Rarely there may be difficulty [illegible]

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6 JUL 1961

taxonomic problem may arise because, in many cases, the larger algae are more or less covered by epiphytic algae. Article 60 of the Botanical Code makes clear that when a name is based on a type "consisting of two or more entirely discordant elements" it must be rejected "unless it is possible to select one of these elements as a satisfactory type." This seems to apply satisfactorily to species of such genera as *Fucus* or *Chara*. But many of the microscopic algae are highly resistant to desiccation. How is the phycologist to know that his herbarium specimens are dead? How about the longevity of desiccated *Nostoches* and the spores and fruiting bodies of *Spirogyra* and *Nitella*? Free living unicellular algae may be difficult or impossible to identify when dried in mixtures. The attempt more accurately to delineate is evidenced by three (not two as stated) additional "method of typification"; 1) by illustration, 2) by description or 3) by a combination of both. Phycologists adept in algal taxonomy may be able to see why any one or all of the four "methods of typification" of algae are superior to recognition of living cultures, maintained by modern techniques quite consistently without significant variation. The microbiologist maintains pure cultures of algae in the laboratory and has the right to demand criteria and techniques that will enable him to use cultures originating from or identical in characters with the standards which we designate as types. Furthermore, some species of algae are described that have never been identified or observed in their native habitat, they have been isolated initially in pure culture, and the descriptions are based upon the organisms thus grown. To say that a killed or preserved specimen of such an organism is superior in usefulness as a type to the original culture is certainly often unrealistic.

Miss van Beverwijk stated in the course of the Montreal conference that "the very purpose of a type was to have something fixed." A true statement, but one which should be supplemented by another, "and which may be used satisfactorily for comparison in the identification of related organisms." Certainly a pure culture of a unicellular alga in a suitable environment is far more usable than any or all of the four acceptable "methods of typification" specified. Dr. van Beverwijk defends the traditional position in the statement "A living culture will always vary." Perhaps there is here the failure to recognize that there are many examples of pure cultures of microorganisms which have been maintained quite unaltered for long periods. The technique of lyophilization is appropriately emphasized. But more recent developments with the very low temperatures of liquid nitrogen indicate that probably in most cases induced cold dormancy maintains viability and does not encourage variability. Pure cultures of certain algae have become essential in the study of photosynthesis and of plant metabolism in general. Culture collections are increasingly including cultures of many algae. Inevitably they will be designated in some cases correctly or incorrectly as type cultures.

The action taken by the Special Committee for *Fungi* and *Lichenes* is, from the microbiological point of view in conformity with what is becoming accepted practice. The statement approved would amend Article 10, part 1 of the Botanical Code by the following additional definition of a type:

> ".... or for microscopic organisms, the type may consist of living cells so maintained that their characteristics are not altered."

Approval of this emendation by the Bureau of Nomenclature would make botanically acceptable the many "type cultures" of fungi in the numerous "type" culture collections of the world. However, Dr. Stafleu appropriately pointed out a serious defect in the definition as approved. He noted that "the Report speaks of microscopic organisms in general and that, therefore, in the present formulation, mycologists would seem not to be qualified to decide on the matter for the Code as a whole." In other words, the mycologists vote yes and the phycologists vote no.

In summary, it seems unfortunate that the Committees on *Spermatophyta, Pteridophyta, Bryophyta* and *Algae* have apparently failed accurately to define what is meant by "non-living." Probably "dried or otherwise preserved so as to prevent growth" might be preferable. The arguments that make desirable recognition of living cultures of fungi as types are equally valid for the algae.

It is regrettable that the statement on Living Types in the Nomenclature Section should end with the contrasting statements:

"For Bacteria and Fungi, the possibility of having living types should be left open. For the other groups this possibility has to be abolished."

"Abolished" seems to indicate unfortunate finality and end of the debate.

WHAT IS THE PURPOSE OF CONSERVATION?

H. W. Rickett (New York)

When conservation of the generic name of a flowering plant is proposed in the pages of Taxon, it is assigned for study to a member of the Committee for Spermatophyta. The mimeographed report that embodies the result of his investigation is distributed to all members of the Committee, and they are invited to submit their comments and opinions, and any further information or considerations that may be relevant. All this material is before each member when he votes for or against the proposal.

From time to time, of course, differences of opinion appear among the members of the Committee. One in particular has become evident several times recently. The name *Juliania* furnishes an example. Schlechtendahl in 1843 gave this name to a new genus, although he knew that it had been previously used for a genus of *Rutaceae* by La Llave in 1825. This was permissible in the nomenclatural practice of the time, since *Juliania* La Llave was found to be a synonym of *Choisya*, published two years earlier. By our rules, however, *Juliania* Schlechtendahl is an illegitimate later homonym. Accordingly, in 1923 Standley took up the name *Amphipterygium* for the genus, and made all necessary transfers. (This was a manuscript name of Schiede, not previously validly published.) But the name *Juliania* is found in an extensive literature which includes standard text-books and such works as *Die Natürliche Pflanzenfamilien*. To abandon the name now would be highly inconvenient to users of such works — particularly to persons not trained in taxonomy. On the other hand, the genus contains only four species, restricted to Mexico and Central America, and of no economic importance. Accordingly, it may be supposed that few persons will be interested in looking for the name in the literature, and those few will be mostly taxonomists, by whom nomenclatural changes can be easily assimilated.

Conservation is resorted to "in order to avoid disadvantageous changes ... entailed by the strict application of the rules ..." The question is, disadvantageous to whom? One member of the Committee for Spermatophyta writes, "In my opinion conservation is against priority, so I reject all conservation made only for taxonomists. These may learn the new names created by their own laws. I agree only with conservation of plant names much used by non-botanists." This is one point of view: conservation is for those who are not botanists. Others would reject this, denying that taxonomists must cater to the convenience of those who are not botanists but use botanical names (horticulturists, foresters, nurserymen, etc.). On this view the only value of conservation is its contribution to the stability of the nomenclatural vessel. This boat can be rocked only by changing the established

names of large, widespread genera; the names of small genera (especially monotypic genera) may easily be changed without any ensuing *mal de mer*.

Still others, among whom the present author would probably enroll himself, seek a more balanced attitude. Name-changing should not, if possible, inconvenience *any* users of names. To rename a small genus of no economic importance troubles no one; the few taxonomists or amateurs who are affected can take it in their stride. But some small genera — even monotypic ones — are of such importance that to change their names would confuse many persons who consult botanical manuals or textbooks of botany, horticulture, or forestry. And much the same considerations apply to large genera. In this view "disadvantageous" means "disadvantageous to a number of persons, botanists and/or others."

Could we discuss this at the 10th Congress?

NOMINA GENERICA CONSERVANDA ET REJICIENDA SPERMATOPHYTORUM IX* BIBLIOGRAPHY

H. W. Rickett (New York) and F. A. Stafleu (Utrecht)

Palisot de Beauvois, Ambroise Marie François Joseph, 1752-1820.

FLORE/D'OWARE ET DE BENIN,/EN AFRIQUE./..../....
Fl. Oware (3792, 4623, 6562)

Vol./Part	Plates	Dates
1(1)	*1-6*	Jan 1805.
(2)	*7-12*	Jan 1805.
(3)	*13-18*	Mai 1805.
(4)	*19-24*	Jun 1805.
(5)	*25-30*	Oct 1805.
(6)	*31-36*	Mai 1806.
(7)	*37-42*	Sep 1806.
(8)	*43-48*	Oct 1806.
(9)	*49-54*	Jan 1807.
(10)	*55-60*	Apr 1807.
2(11)	*61-66*	Mai 1808.
(12)	*67-72*	Sep 1810.
(13)	*73-78*	1810.
(14)	*79-84*	1816.
(15)	*85-90*	1816.
(16)	*91-96*	1818.
(17)	*97-102*	1818.
(18)	*103-108*	1819.
(19)	*109-114*	1819.
(20)	*115-120*	1820.

The dates given for parts 1-12 are based on the reviews in the Journal Général de la Littérature Française, those for parts 13-20 are taken from the original wrappers.

The discrepancy between the years stated on the wrappers and those found by Barnhart can now be solved in most cases. Apart from the copy in the original wrappers seen by Mr. Marshall at Kew, a copy was seen at Hamburg by E. D. Merrill with dates agreeing fully with those of the Kew copy. The Journ. Gén. Lit. Fr. dates agree with those of the wrappers (except for part 6, wrapper 1805), and, since this journal was usually very quick in reviewing, the first 12 issues may now be more precisely dated.

Ref.: Kuntze, Rev. Gen. **3**(2): 154. 1898.
Barnhart, Proc. Am. Philos. Soc. **76**: 914. 1936.
Marshall, Kew Bull. **1951**: 43.
v. Steenis-Kruseman, Fl. Males. **4**(5): ccv. 1954.
Sayre, Dates of Publications 28, 59. 1959.
Merrill, unpublished notes at The New York Botanical Garden.

ESSAI/D'UNE NOUVELLE/ AGROSTOGRAPHIE;/..../
Agrost. (134a, 171, 269, 356)

Dec 1812 [reviewed in Bibliogr. Fr. **3**: 4 (2 Jan 1813) and Journ. Gén. Lit. Fr. **1813**: 4 (Jan 1813)].

There were 2 editions, 8vo (500 copies) and 4to (100 copies) with the same pagination.

Ref.: Niles, Contr. U.S. Nat. Herb. 24(6). 1925.

Palla, Eduard, 1864-1922.
(468b)

* Continued from Taxon 10: 121. 1961.

Pallas, Peter Simon, 1741-1811.

..../REISE/DURCH/VERSCHIEDENE PROVINZEN/DES/RUSSISCHEN REICHS./..../
Reise Russ. Reich. (4421)
3 Volumes, 1771, 1773, 1776: original German edition. A German second edition dates from 1778, a French translation (amended) from 1788-1793.

Ref.: McAtee, Auk **66**: 210. 1949.
Jackson, Journ. Bot. **25**: 70. 1887.

Rev.: Gött. Gelehrte Anz. **1775**: 658. 1 Jul 1775 (vol. 2).

FLORA/ROSSICA,/..../
Fl. Ross. (1901)
1(1): 1-80. *pl. 1-50, 8B.* 1784
(preface id. Oct 1784).
(2): 1-114. *pl. 51-100.* 1788.
.. *pl. 101-125.* 1831
(a few sets only).

Ref.: Jackson, Journ. Bot. **38**: 189. 1900.
Stearn, Journ. Arnold Arb. **22**: 229. 1941.
Dawson, The Banks Letters 645, 646. 1958.

Panzer, Georg Wolfgang Franz, 1755-1829.
(286, 468a)

Parkinson, Sydney, 1745(?)-1771.

A/JOURNAL/OF A/VOYAGE TO THE SOUTH SEAS,/..../
Journ. Voy. South Seas (1946, 3848)
1773.

In 1774, a German translation of the pages dealing with plants appeared (Naturf. **4**: 220. 1774). A French translation was published in 1797. A second English edition appeared in 1784, from which the above division of the title is taken.

Ref.: Merrill, Chron. Bot. **14**: 326. 1954.

Parlatore, Filippo, 1816-1877.

FLORA ITALIANA,/..../
Fl. Ital. (384)
Volumes 1-5, 1848-1875, by Parlatore; 6-10, 1884-1896, by T. Caruel.

Pauquy, Charles Louis Constant, 1800-1854.

DE LA BELLADONE, ...
Diss. Bellad. (7400)
1825 (not seen).

Payson, Edwin Blake, 1893-1927.
(2965a)

Persoon, Christiaan Hendrik, 1761-1836.

SYNOPSIS PLANTARUM,/..../
Syn. Pl. (17 references)
Vol. 1, 1805, post Mar (preface 12 Mar, rev. Bot. Zeit. Regensb. **5**: 17. 31 Jan 1806).
Vol. 2 (1) (pp. 1-272), Nov 1806 (rev. op. cit. **5**: 321. 15 Nov 1806).
(2) (pp. 273-657), Sep 1807 (rev. Journ. Gén. Lit. Fr. Sep 1807).

Two editions were published simultaneously, differing only in the quality of the paper.

Petit-Thouars, see Aubert du Petit-Thouars.

Pfitzer, Ernest Hugo Heinrich, 1846-1906.

MORPHOLOGISCHE STUDIEN/ÜBER DIE/ORCHIDEENBLÜTHE./..../1886./
Morph. Stud. Orch. (1393a)

Philippi, Rudolf Amandus, 1808-1904.

VERZEICHNISS/DER VON/FRIEDRICH PHILIPPI/AUF DER/HOCHEBENE DER PROVINZEN ANTOFAGASTA UND TARAPACÁ/GESAMMELTEN/PFLANZEN./
Verz. Antofagasta Pfl. (7139)
1891.
Also published in Spanish.

Ref.: Gunckel, Revista Univ. Chile **24**(1): 13. 1939.

REISE/DURCH/DIE WUESTE ATACAMA /..../....
Fl. Atac. (8808)
1860.

Added as an appendix: FLORULA ATACAMENSIS/..../ 62 pp.; also issued separately under that title.

Piper, Charles Vancouver, 1867-1926.
(3877)

Pittier de Fábrega, Henri François, 1857-1950.

Planchon, Jules Émile, 1823-1888.

LES VIGNES DES TROPIQUES DU GENRE AMPELOCISSUS, CON-/SIDÉRÉES AU POINT DE VUE PRATIQUE/

This article was published in La Vigne Américaine of Dec 1884 and Jan-Mar 1885. (4910)

Ref.: Flahault, Mém. Acad. Sci. Lettr. Montpellier Sci. **13**: [32 pp.]. 1889. [reprint with separate pagination.]

Pohl, Johann Emanuel, 1782-1834.

PLANTARUM/BRASILIAE/ICONES ET DESCRIPTIONES/..../
Pl. Bras. (8183)
2 Volumes published in 4 parts each. For dates of publication see Stearn. Fascicle 1 of vol. 2 was probably published before 28 Feb 1829 because on that date its publication was announced in Flora, and its contents incl. descriptions given.
Ref.: Stearn, Fl. Males. **4**(5): ccvi. 1954.

Poiret, Jean Louis Marie, 1755-1834, see Lamarck.

Poiteau, Pierre Antoine, 1766-1854.
(4501, 4733)

Pollini, Ciro, 1782-1833.

.... PLANTAE NOVAE VEL MINUS COGNITAE .... 1816.
Pl. Nov. Min. Cogn. (3377)

VIAGGIO AL LAGO DI GARDA .... 1816.
Viaggio Lago di Garda. (3377)

Post, Tom Erik von, 1858-1912; Kuntze, Carl Ernst Otto, 1843-1907.

LEXICON/GENERUM PHANEROGAMARUM/..../1904/
Lex. Phan. (6501)
Dec 1903 (copies were received in various libraries, e.g. Kew, in Dec 1903).

Pourret de Figeac, Pierre André, 1754-1818.
(9365)

Preissler, J.
(5977)

Presl, Jan Swatopluk, 1791-1849; Presl, Karel Boriwog, 1794-1852.

FLORA ČECHICA. /..../
Fl. Cech. (2450)
1819 (preface dated 2 Jan 1819).

DELICIAE/PRAGENSES,/..../
Delic. Prag. (6099)
1822.

Presl, Karel Boriwog, 1794-1852.

FLORA SICULA,/..../
Fl. Sicul. (6099)
One volume ('tomus primus') 1826 (p. xii: 31 Nov 1825).

SYMBOLAE BOTANICAE/..../
Symb. Bot. (2811a)
Two volumes, published in 8 parts: Vol. 1: 1, Oct 1830; 2-3, Sep 1831; 4, ?; 5, ? 1832; Vol. 2: 6-7, ? 1833; 8, 1852.
Ref.: Kuntze, Rev. Gen. **1**: cxxxviii. 1891.

PRODROMUS/MONOGRAPHIAE/LOBELIACEARUM./..../
Prodr. Monogr. Lobel. (5311)
Jul-Sep 1836.
A separately printed and paged part of the Abh. Böhm. Ges. Wiss. ser. 4 (Abh. Phys. Nat.) [4]: 1-32. 1836. The separate publication appeared in 1836; it was bound up with other similar publications in 1837 in the above-mentioned Abhandlungen.
Ref.: Stearn, Journ. Soc. Bibliogr. Nat. Hist. **3**: 14. 1954.

Pursh, Frederick Traugott, 1774-1820.

FLORA AMERICAE SEPTENTRIONALIS; /..../
Fl. Am. Sept. (6277, 7602, 9247)
Jan 1814 vel Dec sero 1813.
Asa Gray and Graustein give some evidence that the work was published late in 1813. A copy was presented to the Linnean Society on 21 Dec 1813. The book was listed as published in the Mon. Lit. Adv. **105**: 2. on 10 Jan 1814 (fide Stearn). We have accepted the findings by Barnhart and Stearn in citing the book as having appeared in Jan 1814.
Ref.: Gray, Am. Journ. Sci. ser. 3. **24**: 323. 1882.
Barnhart, Torreya **4**: 134. 1904.
Fernald, Rhodora **40**: 344. 1938.
Stearn, Rhodora **45**: 415, 511. 1943.
Ewan, Proc. Am. Philos. Soc. **96**: 599. 1952.
Graustein, Rhodora **56**: 275. 1954.

Quer y Martínez, José, 1695-1764.

FLORA ESPAÑOLA,/..../
Fl. Espan. (2986)

1, 1762 (1).	4, 1764.
2, 1762 (2).	5, 1784 (4).
3, 1762 (3).	6, 1784 (4).

(1) Review Gött. Gelehrte Anz. **1764**: 490. 21 Mai 1764.
(2) Review Gött. Gelehrte Anz. **1764**: 535. 2 Jun 1764.
(3) ? final certificate 11 Dec 1762, so perhaps published early in 1763.
(4) Volumes 5 and 6 by C. G. de Ortega.

Raddi Giuseppe, 1770-1829.
(5708)

Rafinesque, Constantine Samuel, 1783-1840.

CARATTERI/DI ALCUNI NUOVI GENERI/..../DELLA SICILIA/..../
Carat. Nov. Gen. Sp. Sicil. (5205)
Part 1, pp. 1-69 [70 blank], 1809.
Part 2, pp. 71-105, 1810, post 1 Apr (preface).

Ref.: Fitzpatrick, Rafinesque 69. 1911.

SPECCHIO DELLE SCIENZE/..../1814/
Specchio, (2902, 4637, 5091, 6099, 7860)

Vol. & part	Pages	Dates 1814
1(1)	1-44	1 Jan.
(2)	45-80	1 Feb.
(3)	81-112	1 Mar.
(4)	113-148	1 Apr.
(5)	149-180	1 Mai.
(6)	181-216	1 Jun.
2(7)	1-32	1 Jul.
(8)	33-64	1 Aug.
(9)	65-96	1 Sep.
(10)	97-128	1 Oct.
(11)	129-160	1 Nov.
(12)	161-196	1 Dec.

Ref.: Fitzpatrick, Rafinesque 74. 1911.

FLORULA LUDOVICIANA;/..../
Fl. Ludov. (1882, 3722, 3858, 6215, 8440, 9241)
1817.

A copy was received by Torrey only on 21 Mar 1818 (see McAllister, A. Eaton p. 255). It was referred to in the Am. Mon. Mag. Crit. Rev. **1**: 453 (Oct 1817).

Ref.: Fitzpatrick, Rafinesque 94. 1911.

NEOGENYTON,/..../1825.
Neogenyton. (471a, 955, 3185)
1825.

MEDICAL FLORA;/..../
Med. Fl. (4915, 5334)
Vol. 1, 1828; 2, 1830.

Ref.: Fitzpatrick, Rafinesque 144, 146. 1911.

/..../ATLANTIC JOURNAL,/..../
Atl. Journ. (3209, 7556, 8706, 9576)

No.	Pages	Dates
1	1-36	spring 1832.
2	37-82	summer 1832.
3	83-122	Sep 1832.
4	123-154	winter 1832.
5	155-170	spring 1833.
6	171-186	summer 1833.
7	187-201	autumn 1833.
8	202-212	winter 1833.

Facsimile reprint, Arnold Arboretum 1946.

Ref.: Fitzpatrick, Rafinesque 160. 1911.

/..../HERBARIUM/RAFINESQUIANUM, /..../
Herb. Raf. (7003, 8353, 8706)

Part	Pages	Dates
1 (1)	1-16	1833.
(2)	17-32	1833.
2	33-48	1833.
3 (1)	49-64	?
(2)	65-80	?

1(1), Atlantic Journal, extra of no. 6 (summer 1833).
1(2), Idem no. 7 (autumn 1833).
2 Idem no. 8 (winter 1833).

Ref.: Fitzpatrick, Rafinesque 175. 1911.
Woodward, Catal. Books Brit. Mus. (Nat. Hist.) **4**: 1639. 1913.

NEW FLORA/..../OF/NORTH AMERICA, /..../
New Fl. (2109, 2477, 3323, 3332, 4247, 8627, 8855)
1, Dec 1836.
2, 1837 sem. 2.
3, 1838 trim. 1.
4, 1838 sero.
Facsimile reprint, Arnold Arboretum 1946.

Ref.: Barnhart, Torreya **7**: 177. 1907.
Fitzpatrick, Rafinesque 190. 1911.

FLORA/TELLURIANA/..../
Fl. Tell. (26 references)

1, 1837 trim. 1.
2, 1837 trim. 1.
3, 1837 Nov-Dec.
4, 1838 med.

Facsimile reprint, Arnold Arboretum 1946.

Ref.: Barnhart, Torreya **7**: 177. 1907.
Fitzpatrick, Rafinesque 193. 1911.

ALSOGRAPHIA/AMERICANA;/..../
Alsogr. (1891a, 1893)
1838.

Ref.: Fitzpatrick, Rafinesque 200. 1911.

SYLVA TELLURIANA./..../
Sylva Tell. (15 references)
1838 trim. 4 (Introduction dated at "Philadelphia, October 1838").

Ref.: Sandwith, Taxon **4**: 70. 1955.

AUTIKON BOTANICON/..../
Aut. Bot. (5035, 6275)

Facsimile reprint, Arnold Arboretum 1942 (gives bibl. note).
Issued in parts:

Part	Pages	Dates
1	[11]-72	1840.
2	[73]-140	1840.
3	[141]-200	1840.

Redouté, Pierre Joseph, 1761-1840.

LES LILIACÉES, ...
Lil. (1285)

8 Volumes, 1802-1816. For dates of issue see Woodward.

Ref.: Woodward, Journ. Bot. **43**: 26. 1905.
Stearn, Herbertia **11**: 15. 1944.

Rees, Abraham, 1743-1825.

THE CYCLOPAEDIA;....
Cycl. (8815)

85 parts, 1802-1820; for precise dates see Jackson.

Ref.: Jackson, Journ. Bot. **15**: 107. 1877; **18**: 87. 1880; **34**: 87. 1896 (dates reprinted in Fl. Males. **4**(5): ccviii. 1954).

Regel, Eduard August von, 1815-1892.
(7878)

Reichenbach, Heinrich Gottlieb Ludwig, 1793-1879.

ICONOGRAPHIA/BOTANICA EXOTICA, /..../
Ic. Bot. Exot. (3285; date must be corrected to 1824)

Cent.	Pages	Plates	Dates
1	1-32	*1-60*	1824 (sem. 1?).
	33-56	*61-80*	1825.
	57-72 i-xx	*81-100*	1827.
2	1-20	*101-150*	1828.
	21-36, Ind., i-xvi	*151-200*	1828(?).
3	1-48, Ind., vii-xvi	*201-250*	1830.

The above division in fascicles is based on the copy in the Library of the Jardin Botanique de l'État, Brussels, which still shows the original division. Further information on the dates of publication is still wanted.

CONSPECTUS/REGNI VEGETABILIS /..../
Consp. (739, 1044, 1077, 1129, 1211, 5040, 8939)
1828.

Another issue, also of 1828, entitled "Übersicht des Gewächs-Reichs ...." differs only in title-pages and preface.

FLORA GERMANICA/EXCURSORIA/..../
Fl. Germ. Excurs. (1077, 2297, 4012a)

1 (1)	(1)-136, 137-140 (20)	1830.
(2)	(141)-184	1831.
(3)	(185)-438	1831.
2 (1)	(435)-648	1832.
(2)	(649)-878	1833.

ICONES FLORAE GERMANICAE ET HELVETICAE....
Ic. Fl. Germ. (3676)

In 25 volumes; 1834-1912; title varies; continued in vols. 13-22 by H. G. Reichenbach, vol. 23 by F. G. Kohl, vols. 24-25 by Beck von Mannagetta. In vols. 13-25 the contents of the parts and the dates of issue are given.

HANDBUCH/DES NATÜRLICHEN PFLANZENSYSTEMS/..../
Handb. (48)
1837.

DER/DEUTSCHE BOTANIKER./ERSTER BAND./DAS HERBARIENBUCH. /..../
[Title also in Latin:] REPERTORIUM HERBARII/SIVE/NOMENCLATOR/ GENERUM PLANTARUM/..../
Nom. (1258)
Band 1, Herbarienbuch (Nomenclator) Jul 1841 (Band 2, Flora Saxonica 1842).

Reichenbach, Heinrich Gustav (filius), 1824-1889.

OTIA BOTANICA HAMBURGENSIA/..../
Otia Bot. Hamb. (1793)
fasc. 1 (nos. 1-5), 1878; 2 (nos. 6-8), 1881.

Reinwardt, Caspar Georg Carl, 1773-1854.

Nova plantarum indicarum genera./
Syll. Pl. **2** (1704, 6291, 8126)
1825 sero vel Jan-Feb 1826.

Title of article in Sylloge Plantarum vol. 2.

Ref.: Kuntze, Rev. Gen. **1**: cxli. 1891.
v. Steenis, Fl. Males. Bull. **1**: 97. 1948.

Reisseck, Siegfried, 1819-1871.
(3647 as "Reissek", 4637)

Retzius, Anders Jahan, 1742-1821.

..../OBSERVATIONES/BOTANICAE/..../
Obs. (1236, 1328, 3967, 6422)

Fasc.	Dates
1	1779.
2	1781.
3	1783.
4	1786 or 1787.
5	Nov 1788.
6	1791, sem. 2, prob. Dec.

Fascicle 5 was received by the Göttingen University Library on 26 Nov 1788, it was reviewed in the Gött. Gelehrte Anz. **1789**: 126. 22 Jan 1789. Fascicle 6 was received on 25 Dec 1791 (information W. T. Stearn).

Ref.: Kuntze, Rev. Gen. **1**: cxli. 1891.

OBSERVATIONUM BOTANICARUM/PUGILLUS/....
Obs. Bot. Pugil. (7518)
14 Nov 1810 (date on title page).

Richard, Achille, 1794-1852.

SERTUM/ASTROLABIANUM./..../
Sert. Astrolab. (4623)
Part 2 of Voyage de l'Astrolabe, Botanique, published 1834 (Part 1: Essai d'une Flore de la Nouvelle-Zélande, publ. 5 Mai 1832).

Ref.: Sherborn and Woodward, Ann. Mag. Nat. Hist. ser. 7. **8**: 333. 1901.

Richard, Louis Claude Marie, 1754-1821.

DÉMONSTRATIONS/BOTANIQUES/OU/ANALYSE DU FRUIT/..../
Démonstr. Bot. Anal. Fruit (2514)
1808 Apr-Jun (rev. Journ. Gén. Lit. Fr. Jun 1808; preface 9 Apr).

DE/ORCHIDEIS EUROPAEIS/ANNOTATIONES,/..../
Orch. Eur. Annot. (1410, 1483, 1490, 1556)
1817, date of separate publication which is preprint from Mém. Mus. Hist. Nat. Paris **4**: 23-61. 1818.

..../COMMENTATIO BOTANICA/DE CONIFEREIS ET CYCADEIS,/..../
Comm. Bot. Conif. Cycad. (15, 31)
1826, probably Oct (Bibl. Fr. **1826** (89): 941. 8 Nov 1826), published as a whole.

Rivinus, Augustus Quirinus, 1652-1723.

ICONES PLANTARUM, QUAE SUNT FLORE IRREGULARI HEXAPETALAE
Ic. Pl. Irreg. Hexapet. (1495)
1760(?), see Pritzel no 7655.

Roemer, Johann Jakob, 1763-1819; Schultes, Josef August, 1773-1831.

..../SYSTEMA VEGETABILIUM/..../
Syst. (228, 3998, 6370, 6857, 7124, 8541)
7 Volumes, 1817-1830 (vol. 7 by J. A. et J. H. Schultes). For dates of publication see Stearn and Cowan.

Ref.: Stearn, Fl. Males. **4**(5): ccix. 1954.
Cowan, Taxon **4**: 83. 1954.

Roemer, Max J.

FAMILIARUM NATURALIUM..../SYNOPSES MONOGRAPHICAE/..../
Syn. Pepon. (8388)
Published in four fascicles, with separate titles, of which the Synopsis Peponiferarum was the second. The first fascicle is dated 14 Sep 1846, the second is dated 1846 and was published probably either Oct-Dec 1846 or early 1847.

Roeper, Johannes August Christian, 1801-1885.
(1502)

Rolander, Daniel, 1725-1793.
(2790)

Rolfe, Robert Allen, 1855-1921.
(8296)

Roscoe, William, 1753-1831.
(1324)

Roth, Albrecht Wilhelm, 1757-1834.

/..../TENTAMEN/FLORAE/GERMANICAE./..../
Tent. Fl. Germ. (2432, 2986)

Vol. & Part	Pages	Dates
1	1-560	Feb-Mai 1788.
2(1)	1-624	Apr-Dec 1789.
(2)	1-593	1793.
3(1)	1-102	1799.
(2)	103-578	1800 prim.

Ref.: Pichi-Sermolli, Webbia **8**: 437. 1952 (vol. 3).
Sayre, Dates of Publications 10. 1959 (vol. 3).
Stafleu, Taxon (to be published) (vols. 1 and 2).

CATALECTA/BOTANICA/..../
Catalecta. (3659, 3661, 7102, 9291)
1, 1797 (pref. 21 Mar 1796).
2, 1800 (pref. 24 Feb 1799) published in 1800, prob. late.
3, 1806 (pref. 12 Sep 1805) published in 1806 sem. 1.

/..../NOVAE/PLANTARUM SPECIES /..../
Nov. Pl. Sp. (1313, 3553, 6468, 8668)
1821 sem. 1.
Ref.: Stearn, Fl. Males. **4**(5): ccx. 1954.

/..../ENUMERATIO/PLANTARUM/PHAENOGAMARUM/..../
Enum. Pl. Phaen. (6526)
1(1): 1-1015, 1827 (preface dated 6 Jan 1827).
(2): 1-642, 1827 (preface dated 6 Jan 1827).
The second part, cited in Roth's *Manuale Botanicum*, 1830, was never published.

Rottbøll, Christen Friis, 1727-1797.

DESCRIPTIONUM/ET/ICONUM/RARIORES..../NOVAS PLANTAS/..../
Descr. Ic. Nov. Pl. (462)
1773.

Roxburgh, William, 1751-1815.

PLANTS/OF THE/COAST OF COROMANDEL/..../
Pl. Corom. (4281, 4604, 4938, 5505, 5525, 6422, 6564)

Vol. & Part	Pages	Plates	Dates
1(1)	1-28	*1-25*	Mai 1795.
(2)	29-40	*26-50*	Nov 1795.
(3)	41-56	*51-75*	Aug 1796.
(4)	57-68	*76-100*	Jan-Aug 1798.
2(1)(5)	1-16	*101-125*	Mai 1799.
(2)(6)	17-28	*126-150*	Mai 1800.
(3)(7)	29-40	*151-175*	Apr 1802.
(4)(8)	41-56	*176-200*	Mai 1805.
3(1)(9)	1-24?	*201-225?*	Jul 1811.
(2)(10)	25?-48?	*226?-250?*	Mai 1815.
(3)(11)	49?-72?	*251?-275?*	Feb-Mar 1820.
(4)(12)	73?-98	*276?-300*	Feb-Mar 1820.

Ref.: Stearn, Fl. Males. **4**(5): ccx. 1954.

FLORA INDICA;/..../
Fl. Ind. (5729, 8312)
1, 1820, probably sem. 1 (see preface vol. 2).
2, 1824, sem. 1 (preface dated 1 Mar).

Rueling, Johann Philipp, 1741- .

ORDINES NATURALES PLANTARUM ....
Ord. Pl. (2261)
1774.
Rev.: Gött. Gelehrte Anz. **1775**: 153. 14 Feb 1775.

Ruiz Lopez, Hipólito, 1754-1815; Pavon, José Antonio, 175x-1844.

FLORAE PERUVIANAE, ET CHILENSIS/PRODROMUS,/..../
Prodr. (15 references)
1794 (referred to by Cavanilles, Ic. 3: preface, 10 Jan 1795).

SYSTEMA VEGETABILIUM/FLORAE/PERUVIANAE ET CHILENSIS,/..../
Syst. (206, 594, 1937, 2407, 5759, 9545)
1798.

FLORA PERUVIANA, ET CHILENSIS,/SIVE DESCRIPTIONES, ET ICONES /..../
Fl. Peruv. Chil. (861, 924, 1146, 3081, 8209)

Vol.	Plates	Dates
1	*1-106*	1798.
2	*107-222*	1799.
3	*223-325*	1802.
4	*326-425*	

Vol. 4 was not issued, although copies of the plates, acquired by the London book-seller O. Rich, were sold (or given) to several botanists. At least four sets (Kew, British Museum, Linnean Soc., Institut de France) are known to exist so technically the plates have to be considered as effectively published! It would be difficult, however, to ascertain the date of this publication: Guillemin (Arch. Bot. **1**: 381. 1833) mentions Rich (not by name) as having given copies away.

Rumphius, Georg Everard, 1627-1702.

..../HERBARII/AMBOINENSIS/AUCTUARIUM,/..../
Auct. (1108, 2097, 4120, 4137)
1755 sem. 2 (preface dated 20 Jun 1755).
Title also in Dutch. Vol. 7 of the Herbarium Amboinense (1741-1755).
Ref.: Merrill, Interpr. Herb. Amb. 1917.

Ruprecht, Franz Josef (Ivanovich), 1814-1870.

FLORES/SAMOJEDORUM CISURALENSIUM/..../
Beitr. Pflanzenk. Russ. Reich. **2**: [4]1-67. *t. 1-6.* 1845 (384)

Rusby, Henry Hurd, 1855-1940.
(8209)

Rydberg, Per Axel, 1860-1931.
(9147)

Sagra, Ramón de la, 1798-1871.

HISTOIRE/PHYSIQUE, POLITIQUE ET NATURELLE/DE/L'ILE DE CUBA /..../BOTANIQUE.—PLANTES VASCULAIRES./PAR ACHILLE RICHARD./..../
Hist. Phys. Cuba (4060)
1845 (1841-1846?).

12 Volumes (not numbered), 1839-1857, of which the above one by A. Richard. A second volume on the vascular plants was included only in the Spanish edition as volume 11 (1850). The French and the Spanish editions of the first volume by A. Richard are both dated 1845, but the French one seems to have priority. The book was published in parts: see v. Steenis-Kruseman.

Ref.: Urban, Bot. Jahrb. **19**: 563. 1894.
Kuntze, Rev. Gen. **3**(2): 162. 1898.
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 741. 1960.

Saint-Hilaire, Auguste César François Provençal de, 1779-1853.

FLORA/BRASILIAE MERIDIONALIS, /..../
Fl. Bras. Mer. (2680)

Published in 24 parts between 1824 and 1834. There were two editions (folio and quarto) of which the parts seem to have appeared simultaneously. Each part of the quarto edition contained in general 5 sheets (40 pages) and 8 plates. Below we list the dates of the numbers of the *Bibliographie de la France* in which the various fascicles are listed. The page numbers refer to the quarto edition, the precise contents of the fascicles of the folio edition still being unknown. The page numbers of the quarto edition listed show some deviations from the strict scheme of 40 pages per part. They were ascertained by Barnhart from a copy in original wrappers that we have not yet been able to trace. The dates agree on the whole very well with other contemporary reviews in e.g. *Isis* and *Linnaea*. Still, there are a few discrepancies (e.g. in the order of publication of fasc. 20-24) to be solved and the present survey is to be considered as provisional only. Fasc. 1-4 were edited by Saint-Hilaire alone. From fasc. 5 onwards A. de Jussieu and J. Cambessèdes were adopted as co-authors because of Saint-Hilaire's ill-health.

Vol. & Part	Pages (4-to)	Plates	Dates Bibl. Fr.
1(1)	1-40	*1-8*	1 Jan 1825.
(2)	41-80	*9-16*	26 Mar 1825.
(3)	81-120	*17-24*	11 Jun 1825.
(4)	121-168	*25-32*	16 Nov 1825.
(5)	169-200	*33-40*	25 Apr 1827.
(6)	201-240	*41-48*	18 Jul 1827.
(7)	241-280	*49-56*	5 Apr 1828.
(8)	281-320	*57-64*	28 Jun 1828.
(9)	321-360	*65-72*	4 Oct 1828.
(10)	361-400	*73-80*	6 Dec 1828.
2(11)	1-40	*81-88*	9 Mai 1829.
(12)	41-80	*89-96*	1829, (not in Bibl. Fr.).
(13)	81-116	*97-104*	10 Oct 1829.
(14)	117-156	*105-112*	8 Mai 1830.
(15)	157-196	*113-120*	24 Jul 1830.
(16)	197-236	*121-128*	1830, (not in Bibl. Fr.).
(17)	237-276	*129-136*	4 Dec 1830.
(18)	277-316	*137-144*	25 Feb 1832.
(19)	317-356	*145-152*	27 Oct 1832.
(20)	357-384	*153-160*	3 Aug 1833.
3(21)	1-40	*161-168*	26 Oct 1833.
(22)	41-84	*169-176*	4 Mai 1833.
(23)	86-120	*177-184*	12 Jul 1834.
(24)	121-160	*185-192*	21 Dec 1833.

DEUXIÈME MÉMOIRE/SUR/LES RÉSÉDACÉES;/..../
2me Mém. Réséd. (3122)

The "Premier mémoire" appeared in the Ann. Soc. Roy. Sci. Orléans, vol. 13. This first memoir was reprinted together with the original publication of the second one in the Mém. Acad. Sci. Paris **15**: 1-30, 313-354. 1838 (probably issued already in 1837). In his preface to the separate edition the author states "je dois la considérer comme non avenue" because of the many mistakes. This separate edition appeared perhaps very late in 1837, but most probably in early Jan 1838 (Bibl. Fr. **1838**: 15. 17 Jan 1838). This means also that the part of the Mém. Acad. Sci. Paris **15**, containing the two memoirs must have been published in 1837. Since evidently the first publication of the second memoir was unauthorised, it seems advisable to follow the separate edition. The original publication of 3122 *Caylusea* is therefore in Mém. Acad. Sci. Paris **15**: 342. 1837 ('1838'), but not accepted by its author.

Saint-Hilaire, Jaume, see Jaume Saint-Hilaire.

Salisbury, Richard Anthony, 1761-1829.

THE/PARADISUS LONDINENSIS:/..../
Parad. Lond. (992, 1053, 1559, 2026, 2035, 3444, 5149, 5155)

Of *t. 1-32* with accompanying text, an issue exists from 1805-1806 with a title-page on

which Salisbury's name is not mentioned. In 1806 they were again issued with a title-page stating that the descriptions were by R. A. Salisbury. On the 1805 title-page William Hooker's name is mentioned as "by William Hooker" which is the reason that he is often cited as the author. It is clear, however, that Hooker made the drawings and that Salisbury was responsible for the descriptions and names.
The plates are all dated, and in general such dates were intended as dates of issue; until there is evidence that the actual publication took place at a later date, these dates must be regarded as correct. The book seems to have been issued in 40 parts from 1805 to 1808 (1809 according to Pritzel, but latest date on plates is 1 Sep 1808).

Salt, Henry, ca. 1780-1827.

A/VOYAGE TO ABYSSINIA,/..../
Voy. Abyss. (3553)
1814 sem. 2 (preface dated 9 Jul 1814).

Part of appendix 4 by R. Brown: lxiii-lxv: List of new and rare plants,/collected in Abyssinia..../..../. The new names in this list are almost exclusively *nomina nuda.*

Saporta, Louis Charles Joseph Gaston de, 1823-1895.
(4073)

Savi, Gaetano, 1769-1844.
FLORA PISANA/..../
Fl. Pisana (3693)
2 Volumes, 1798 (vol. 2 prob. 1799 prim.).

Scepin, Constantin, 1727- .

/..../DE/ACIDO VEGETABILI,/..../
De Acido Veg. (9155)
19 Mai 1758 (academic thesis).

Schaeffer, Jacob Christian, 1718-1790.

..../BOTANICA/EXPEDITIOR/..../
Bot. Exped. (2821)
1760 trim. 4 (preface dated 1 Oct 1760).

Schauer, Johann Konrad, 1813-1848.
(8100, 8265)

Scheele, Georg Heinrich Adolf, 1808-1864.
(8215)

Scheidweiler, Michel Joseph François, 1799-1861.
(910)

Schlechtendal, Diederich Franz Leonhard von, 1794-1866.
(2856, 5990, 5977, 6045, 8365)

Schlechter, Friedrich Richard Rudolf, 1872-1925.
(post 1834)

Schmidt, Franz Wilibald, 1764-1796.

/..../NEUE UND SELTENE/PFLANZEN, /..../
Neue Selt. Pfl. (4038, 4959)
1793 ante Oct.

Rev.: Ann. Bot. Usteri **6**: 115. 1793 sem. 2, Gött. Gelehrte Anz. **1793**: 1608. 7 Oct 1793.

FLORA BOËMICA INCHOATA, ...
Fl. Boëm. (1386)
1793-1794, 1 volume, cent. 1-2, 1793; 3-4, 1794.

The original coloured plates, referred to in the text, belonging to cent. 1 and 2 are in the University Library of Prague. See Čelakowský.

Ref.: Čelakowský, Lotus **20**: 177. Nov 1870.

Schmidt, Johann Anton, 1823-1905.

Beiträge/zur/Flora der Cap Verdischen Inseln./..../1852./
Beitr. Fl. Cap Verd. Ins. (312)
1852 (preface 1 Dec 1851).

Schneevoogt (Schneevoigt), G. Voorhelm, 1775?-1871.
(3868)

Ref.: Stearn, Journ. Bot. **78**: 66. 1940.

Schott, Heinrich Wilhelm, 1794-1865.

SYNOPSIS/AROIDEARUM/..../1856./
Syn. Aroid. (779)
1856.

Schott, Heinrich Wilhelm, 1794-1865; Endlicher, Stephan Ladislaus, 1804-1849.

MELETEMATA/BOTANICA./..../
Melet. Bot. (723, 739, 784, 4623, 5091)
1832.

Schrader, Heinrich Adolph, 1767-1836.

PLANTARUM SEMINA/IN HORTO ACADEMICO GOTTINGENSI/ANNO 1814 COLLECTA./
Ind. Sem. Hort. Gott. (8541, 8668)
2 Dec 1814 (date on p. 12).
Contains no descriptions.

Schrank, Franz von Paula von, 1747-1835.

..../BAIERSCHE REISE./..../
Baier. Reise (2908)
1786 (preface dated 5 Apr 1786).

BAIERSCHE/FLORA/..../
Baier. Fl. (206)
2 Volumes, 1789.

Rev.: Gött. Gelehrte Anz. **1790**: 1528. 23 Sep 1790.

Schreber, Johann Christian Daniel von, 1739-1810.

CAROLI A LINNÉ/..../GENERA/
PLANTARUM/..../
Gen. (26 references)
Vol. 1: [1]-379. 1789 trim. 2; 2: 381-872. Mai-Jun 1791.
The above dates are based on the prefaces, on the Göttingen library accessions register consulted by W. T. Stearn, and on contemporary reviews.

Schultes, Josef August, 1773-1831.

..../OBSERVATIONES/BOTANICAE
/..../1809./
Obs. Bot. (1055)

Schultes, Josef August, 1773-1831; Schultes, Julius Hermann, 1804-1840.

MANTISSA/IN/VOLUMEN..../
SYSTEMATIS VEGETABILIUM/
CAROLI A LINNÉ/EX EDITIONE/
JOAN. JAC. ROEMER M.D. ETC./ET/
JOS. AUG. SCHULTES M.D. ETC./
Mant. (468a)
1, 1822 sero; 2, 1824; 3, 1827 sem. 2.

Ref.: Stearn, Fl. Males. **4**(5): ccxii. 1954.

Schultes, Julius Hermann, 1804-1840, see under Schultes, Josef August.

Schultz, Karl (Carl) Heinrich, 1798-1871.
(4747, 8761, 8772)

Schumacher, Heinrich Christian Friederich, 1757-1830.

BESKRIVELSE/AF/GUINEISKE
PLANTER/..../
Beskr. Guin. Pl. (7697, 8918)
Extracted (in advance?) from Danske Vid. Selsk. Afh. **3**: 21-248 (1828); **4**: 1-236 (1829). Often cited as Schumacher et Thonning. Peter Thonning's name, however, appears on the title page only as collector, not as co-author. Some fragments of descriptions are initialled "Th.", the diagnoses and the names are all signed "S.". According to Marshall the reprint antedates the publication in the serial. This is questionable (see Exell).

Ref.: Marshall, Kew Bull. **1953**: 280.
Exell in v. Steenis-Kruseman, Fl. Males. **4**(5): ccxii. 1954.

Schumann, Karl Moritz, 1851-1904.
(5022a)

Scopoli, Johann Anton, 1723-1788.

/FLORA/CARNIOLICA/..../
Fl. Carn. (3669)
Ed. 1, one volume, 1760; ed. 2, two volumes, 1772.

/..../INTRODUCTIO/AD/HISTORIAM/
NATURALEM/..../
Intr. (39 references)
1777 quadrim. 1.

Scopoli sent a copy of his book to Banks on 10 May 1777.

Ref.: Dawson, The Banks Letters 738. 1958.

Seemann, Berthold Carl, 1825-1871.

FLORA VITIENSIS/..../
Fl. Vitiens. (639)

1865-1873. The dates of printing-off (not necessarily of publication!) are given on the sheets beginning with Sig. R. (p. 121); pp. 325 to the end were not, however, issued till 1873.

The following dates were obtained by W. T. Stearn as a result of collating contemporary reviews:

Part.	Pages	Plates	Dates
1	1-40	*1-10*	1865.
2	41-81	*11-20*	1865.
3	81-120	*21-30*	1866.
4	121-144	*31-40*	1866.
5	145-196	*41-50*	1866.
6	197-236	*51-60*	1867.
7	237-268	*61-70*	1868.
8	269-292	*71-80*	1868.
9	293-324	*81-90*	1868.
10	325-434	*91-100*	1873.
	i-xxxiii		

Ref.: Woodward, Catal. Books Brit. Mus. (Nat. Hist.) **4**: 1892. 1913.

Seidl, Wenzel Benno ('Seidel'), 1773-1842.
(228)

Sesler, Lionardo, -1785.
(6318)

Seubert, Moritz August, 1818-1878.
(923)

Sibthorb, John, 1758-1796; Smith, James Edward, 1759-1828.

FLORAE GRAECAE/PRODROMUS:/..../
Fl. Graecae Prodr. (2514)

Vol.	Pages	Dates
1 (1)	i-xvi 1-218	1806 (prob. Oct-Nov).
(2)	219-442	Mai-Nov 1809.
2 (1)	1-210	1813.
(2)	211-422	1816.

Ref.: Greene, Bull. Torrey Club **14**: 178, 257. 1887.
Stearn, Fl. Males. **4**(5): ccxiii. 1954.

Sieber, Franz Wilhelm, 1789-1844.
(3676)

Siebold, Philipp Franz von, 1796-1866.
(417)

Silva Manso, Antonio Luiz Patricio da, 1788-1848.

ENUMERAÇÃO/DASI SUBSTANCIAS BRAZILEIRAS,/..../1836./
Enum. Subst. Braz. (8627).

Sims, John, 1749-1831.
(2412, 9054)

Skeels, Homer Collar, 1873-1934.
(6370)

Smith, James Edward, 1759-1828.

PLANTARUM ICONES/HACTENUS INEDITAE,/....
Pl. Ic. Ined. (4733)
1, Apr-Aug 1789; 2, 1790 trim. 2; 3, 1791 post Apr.

Both the reviews of part 1 in Gent. Mag. **1789**: 827 (Sep 1789) and in the Mon. Rev. London **81**: 112 (1789) were considerably earlier than the reviews in these same journals of Aiton's *Hortus Kewensis*. The above dates are based on the contemporary reviews quoted above, on those in the German periodicals, and on the dates of the prefaces.

Ref.: Sherborn, Journ. Soc. Bibliogr. Nat. Hist. **1**: 142. 1938.

EXOTIC BOTANY:/..../
Exot. Bot. (1021)
2 Volumes, 1804-1807.

Preface dated 1 Dec 1804. The plates are dated.

Ref.: Kuntze, Rev. Gen. **1**: cxliv. 1891.

A SPECIMEN OF THE BOTANY OF NEW HOLLAND ....
Spec. Bot. Nov. Holl. (6262p)

Part	Pages	Plates	Dates
1	1-14	*1-4*	1 Oct 1793.
2	15-24	*5-8*	15 Oct 1793.
3	25-38	*9-12*	2 Jul 1794.
4	39-54	*13-16*	6 Jan 1795.

Ref.: Stearn in Fl. Males. Bull. **3**: 567. 1957.

Solander, Daniel, 1736-1782.
(1146, 1284, 3516, 3753, 5018)

Sommerfelt, Søren Christian, 1794-1838.
(8919)

Sonnerat, Pierre, 1748-1814.

VOYAGE/A LA/NOUVELLE GUINÉE, /..../
Voy. Nov. Guin. (5497)
1776, trim. 1.

Rev.: Obs. Phys. Hist. Nat. Arts **7**: 277. Mar 1776.

Spach, Édouard, 1801-1879.

HISTOIRE NATURELLE/DES/ VÉGÉTAUX,/PHANÉROGAMES. /..../
Hist. Nat. Vég. Phan.

14 Volumes of text, issued complete, and an atlas issued in separate parts as follows. The dates are those of the reviews in the Bibl. Fr., which may be taken as very near the actual dates of publication.

Vol.	Plates	Dates
1	*1-10*	8 Mar 1834.
2	*11-20*	12 Jul 1834.
3	*21-40*	27 Sep 1834.
4	*41-60*	11 Apr 1835.
5	*61-80*	2 Jul 1836.
6	*81-100*	10 Mar 1838.
7	*101-120*	4 Mai 1839.
8	*121-140*	23 Nov 1839.
9	-	15 Aug 1840.
10	-	20 Mar 1841.
11	-	25 Dec 1841.
12	*141-152*	27 Jun 1841.
13	-	27 Jun 1841.
14	-	11 Dec 1847.

Spin, Marquis de,

LE JARDIN DE ST. SÉBASTIEN 1809
Jard. St. Sébast. (5708) (not seen).

Sprague, Thomas Archibald, 1877-1958.
(384, 4226, 8751)

Sprengel, Anton, 1803-1851.

TENTAMEN SUPPLEMENTI/..../
1828, sem. 2.
The fifth volume of K. Sprengel's Systema, q.v.

Sprengel, Kurt (Curtius) Polycarp Joachim, 1766-1833.

PLANTARUM/MINUS COGNITARUM/PUGILLUS SECUNDUS./..../
Pugil. 2 (134, 1055, 6526, 8140)
Pugil. 1, 1813; 2, 1816.

PLANTARUM/UMBELLIFERARUM/..../PRODROMUS/..../
Pl. Umbell. Prodr. (6058)
1813; also issued in Neue Schr. Naturf. Ges. Halle **2**(1) 1813.

/..../ANLEITUNG/ZUR/KENNTNISS DER GEWÄCHSE./..../
Anl. (15, 3032, 3042, 5040, 5075, 7810, 7932, 9446)

Vol.	Ed. 1	Ed. 2
1	7 Sep 1802	13 Apr 1817.
2	11 Dec 1802	20 Apr 1817.
3	28 Mar 1804	31 Mar 1818.

Ref.: Sayre, Dates of Publications 21. 1959.

NOVI PROVENTUS/..../
Novi Prov. (8926, 9168)
1819 (no date on title page, 1819 fide Pritzel e.a.).

NEUE/ENTDECKUNGEN/..../
Neue Entd. (17, 2902, 6099, 7792, 8855)
Vol. 1, 1819 or before 20 Aug 1820; 2, 1820 sero; 3, 1822.

Ref.: Sayre, Dates of Publications 65. 1959.

..../SYSTEMA/VEGETABILIUM./..../
Syst. (748, 1283, 1648, 3103, 3582, 4011, 5259, 5528, 8183, 8312, 8855, 8939)

Vol.	Dates
1	1824 sero.
2	1825.
3	1826 sem. 1.
4	1827 sem. 1.
(5)	Suppl. 1828 sem. 2.

The fifth volume is the "Tentamen supplementi" by Anton Sprengel.

Ref.: Stearn, Fl. Males. **4**(5): ccxiii. 1954.

Stackhouse, John, 1742-1819.
(5411)

Stapf, Otto, 1857-1933.
(329)

Steck, Abraham,

..../DISSERTATIO INAUGURALIS MEDICA/DE/SAGU/..../
De Sagu. (575)
21 Sep 1757 (date on title page).

Sternberg, Kaspar Maria von, 1761-1838.

VERSUCH/EINER/GEOGNOSTISCH-BOTANISCHEN DARSTELLUNG/DER/FLORA DER VORWELT/..../
Fl. Vorw. (32)
1820-1838, 8 Hefte, of which the four first are separately paged.

Steudel, Ernst Gottlieb von, 1783-1856.

SYNOPSIS/PLANTARUM CYPERACEARUM/ET AFFINIUM/..../
Syn. Pl. Cyp. (454)
Part 2 of Steudel's *Synopsis plantarum glumacearum* of which the publication was as follows (fide Stearn):

Parts & fasc.	Pages	Dates
1(1)	1-80	Jan 1854.
(2)	81-160	Feb 1854.
(3)	161-340	ante 20 Apr 1854.
(4-5)	341-400	ante 27 Jul 1854.
(6)	401-475	Jan 1855 (?).
2(7)	1-80	Jan 1855 (?).
(8-9)	81-240	Apr 1855 (?).
(10)	241-348	Sep 1855 (?).

Ref.: Stearn, Fl. Males. **4**(5): ccxiv. 1954.

Steven, Christian von, 1781-1863.
(471a, 7306)

Stokes, Jonathan, 1755-1831.

A/BOTANICAL/MATERIA MEDICA, /..../
Mat. Med. (4542, 5091)
4 Volumes, 1812 (dedication dated 20 Mar 1812).

Ref.: Britten et Boulger, Journ. Bot. **52**: 299. 1914.

Stuntz, Stephen Conrad, 1875-1918.
(5538)

Swartz, Olof Peter, 1760-1818.

NOVA/GENERA & SPECIES/
PLANTARUM/SEU/PRODROMUS
/..../
Prodr. (13 references)
20 Jun—31 Jul 1788.

Ref.: Stearn, Baileya **5**: 197. 1957.

..../FLORA/INDIAE OCCIDENTALIS
/..../
Fl. Ind. Occ. (5692)
Vol. 1, Nov 1797 (Swartz, in litt.).
2(1) pp. 641-928, 1798 sem. 1.
(2) pp. 929-1230, 1800 (prob. Oct).
3, 11 Oct 1806 (Sayre).

Ref.: Dawson, The Banks Letters 800. 1958.
Sayre, Dates of Publications 30. 1959.
Stearn, *in litt.*

Sweet, Robert, 1783-1835.

SWEET'S HORTUS BRITANNICUS;
/..../SECOND EDITION./..../
Hort. Brit. (7510)
Ed. 1, 1826-1827; ed. 2, 1830; ed. 3 [ed. G. Don] 1839.

THE/*BRITISH*/FLOWER GARDEN;/..../
Brit. Fl. Gard. (5036, 7559)
Series 1, 300 pl., 3 vols. 1823-1829; series 2, 412 pl., 4 vols. 1829-1838.
The plates are dated. The plates were issued in 'monthly' parts.

Szyszylowicz, Ignaz von, 1857-1910.
(5155)

Tausch, Ignaz Friedrich, 1793-1848.
(7097)

Temminck, Conrad Jacob, 1778-1858.

VERHANDELINGEN/OVER/DE
NATUURLIJKE GESCHIEDENIS/
DER/NEDERLANDSCHE
OVERZEESCHE BEZITTINGEN,/
Verh. Nat. Geschied. Nederl. Overz. Bezitt. (8227)
For particulars see De Wit.

Ref.: De Wit, Fl. Males. Bull. **1**: 164. 1950, also in Fl. Males. **4**(5): cxciii. 1954, sub Korthals (who took care of the botanical part).

Teysmann, Johannes Elias, 1809-1882.
(1360, 2793)

Thouars, see Aubert du Petit-Thouars.

Thunberg, Carl Per, 1743-1828.

NOVA GENERA/PLANTARUM,/..../
Nova Gen. Pl. (2069, 2798, 2821, 3558, 3661, 4035, 4083, 4709, 5157a, 6285)
1781-1801. Consists of 16 theses, with continuous pagination, of which the dates on which they were defended are given on the title pages.

/..../FLORA/JAPONICA/..../
Fl. Jap. (1857)
1784 trim. 4 (vel 1785 sem. 1).
The date of publication is uncertain. On 12 Sep 1784 Thunberg writes to Banks informing him that his Flora Japonica has been printed in Leipzig, but that he has received no copies yet. On 25 Jun 1785 Thunberg sends Banks a copy.

Ref.: Dawson, The Banks Letters 821. 1958.

PRODROMUS/PLANTARUM/
CAPENSIUM,/..../
Prodr. Pl. Cap. (1110, 1430, 3106, 3967, 6422, 8598)
pars 1, 1-84, 1794; 2, 85-191, 1800.

Ref.: Rothmaler, Chron. Bot. **5**: 440. 1939.
Rev.: Ann. Bot. Usteri **18**: 107, 108. 1796.
Journ. Bot. Schrader **2**: 371-376. 1801.

/..../FLORA CAPENSIS,/..../
Fl. Cap.
Fl. Cap. ed. J. A. Schultes (9365)
Ed. 1,

1(1)	pp	1-144,	1807.
(2)		145-386,	1811.
(3)		387-578,	1813.
2(1)		1-248,	1818.
(2)		249-352,	1820.

Ed. 2, by J. A. Schultes, 2 vols., 1823.
Ed. 3, of vol. 1(1,2) only, 1824.

PLANTARUM BRASILIENSIUM/DECAS
PRIMA./..../
Pl. Bras. Dec. (9428, incorrectly as Dec. Fl. Bras.)
Dec. 1, 14 Jun 1817.
Dec. 2, 18 Nov 1818.
Dec. 3, 23 Mai 1821.

Thwaites, George Henry Kendrick, 1812-1882; Hooker, Joseph Dalton, 1817-1911.

ENUMERATIO/PLANTARUM
ZEYLANIAE:/..../
Enum. Pl. Zeyl. (4467)

Part	Pages	Dates
1	1-80	1858.
2	81-160	1859.
3	161-240	1860.
4	241-320	1861.
5	321-483	1864 sero.

Torrey, John, 1796-1873.

REPORTS/OF/EXPLORATIONS AND SURVEYS,/..../VOLUME IV..../1856./
Pacif. Railr. Rep. (8706, should be 4(5[4]))
Sep 1857 (Introduction to part 5(4) dated 12 Jan 1857).

For the very involved bibliography of the Pacific Railroad Reports see McKelvey. The present publication by Torrey is number four of part V, which is the first part actually (separate pagination) of volume 4. According to Johnston, advance reprints of this volume were available in Sep 1857.

Ref.: Johnston, Journ. Arnold Arb. **24**: 237. 1943.
McKelvey, Journ. Arnold Arb. **40**: 38. 1959.

..../REPORT/ON THE/UNITED STATES AND MEXICAN BOUNDARY SURVEY,/..../VOLUME II./..../1859/PART I./ BOTANY OF THE BOUNDARY./..../
Bot. Mex. Bound. (1006)

Introduction by Parry, Botany by Torrey, Cactaceae by Engelmann.
Editor of the report: W. H. Emory.
1859.

Torrey, John, 1796-1873; Gray, Asa, 1810-1888.

A/FLORA OF NORTH AMERICA:/..../
Fl. N. Am. (2477, 3126, 3196, 3209, 3619, 8629, 8840)

Part	Pages	Dates
1(1)	1-184	Jul 1838.
(2)	185-360	Oct 1838.
(3)	361-544	Jun 1840.
(4)	545-698	Jun 1840.
2(1)	1-184	Mai 1841.
(2)	185-392	Apr 1842.
(3)	393-504	Feb 1843.

Ref.: Jackson, Journ. Bot. **31**: 297. 1893.
Tucker, Journ. Arnold Arb. **2**: 183. 1921.
v. Steenis-Kruseman, Fl. Males. **4**(5): ccxiv. 1954.

Trattinnick, Leopold, 1764-1849.

FLORA/DES ÖSTERREICHISCHEN KAISERTHUMES,/..../
Fl. Österr. Kaiserth. (228, 312)
2 Volumes (24 parts), 1816-1822 (Pritzel).

GENERA PLANTARUM/..../
Gen. Pl. (4501)
1802, post Mar (preface Cal. Apr 1802).

Trécul, Auguste Adolphe Lucien, 1818-1896.
(1942)

Trevisan de Saint-Léon, Vittore Benedetto Antonio, 1818-1897.

SAGGIO/..../ALGHE COCCOTALLE /..../
Alghe Cocc. (1751)
1848.

Trew, Christoph Jakob, 1695-1769.

PLANTAE/SELECTAE/..../....PINXIT/ ....EHRET/..../
Pl. Sel. Pinx. Ehret (1315, 5007, 5692)
10 Dec. each with a separate title page, 10 plates/dec., 1750-1753.

HERBARIUM BLACKWELLIANUM/..../
Herb. Blackw. (4498a)
5 Volumes, 1757-1765, (Pritzel no 812).

/..../CEDRORUM/LIBANI HISTORIA /..../
Cedr. Lib. Hist. (23)
1757 (pars 1; pars 2 'Apologia et Mantissa' publ. in 1767).

Triana, José Jerónimo, 1834-1890.
(5648, 5768)

Trinius, Carl Bernhard von, 1778-1844.

FUNDAMENTA/AGROSTOGRAPHIAE/ ..../...., 1820/..../
Fund. Agrost. (134)
1820.

Tuckey, James Kingston, 1776-1816.

Narrative of an Expedition to explore the river Zaire usually called the Congo in South Africa in 1816. London 1818.
Narr. Exp. Congo (452)
Appendix V, R. Brown, Observations .... on C. Smith's collection of plants ...." (continuous pagination) was published in Mar 1819 according to W. T. Stearn (unpubl. information).

Turczaninow, Nicolaus von, 1796-1864.
(post 1834, 4234)

Turpin, Pierre Jean François, 1775-1840.
(4118)

Unger, Franz Joseph Andreas Nicolaus, 1800-1870.
(542)

Urban, Ignatz, 1848-1931.
(3871)

Vahl, Martin, 1749-1804.

SYMBOLAE BOTANICAE, SIVE/ PLANTARUM/..../
Symb. (1587, 3518, 9057)
Vol. 1, Aug-Nov 1790; 2, 1791 sem. 2; 3, 1794.
Vol. 1 was received by the Göttingen University Library on 8 Dec 1790 (information from W. T. Stearn), the preface is dated 1 Jun 1790. The reviews in the contemporary periodicals are later than 1790. Vol. 2 was received on 25 Dec 1791, the reviews are from 1792.

ECLOGAE AMERICANAE/..../
Ecl. (5341, 8241)
1, 1796; (preface dated Cal. Mar 1797); 2, 1798; 3, 1807.

/..../ENUMERATIO/PLANTARUM,/..../
Enum. (452, 459, 465, 471b, 492, 6421, 7151, 7810)
1, 1804 sem. 2 (reprinted 1805) (preface dated 28 Jun 1804).
2, 1805 sero vel 1806 (reprinted 1806) (preface dated 15 Oct 1805).
There are two different editions of this book, the original one with title-page dated 1804 (vol. 1) and 1805 (vol. 2, seen by Barnhart, not seen by us) and the reprint (by a different printer) with 1805 (vol. 1) and 1806 (vol. 2).
'The second volume did not appear before its preface-date (4 Oct 1805), but may not have been issued until 1806 in spite of the fact that it exists with title-page date 1805' (Barnhart).
The first volume was mentioned in Ann. Bot. Konig et Sims, **1**: 584 (1 Jan 1805) from which note it is evident that vol. 1 appeared in 1804. Vahl died on 24 Dec 1804.

Vandelli, Domingos, 1735-1816.

FLORAE LUSITANICAE/ET/ BRASILIENSIS/SPECIMEN/..../
Fl. Lusit. Bras. (4031, 4266, 5171, 6639)
1788.

Vatke, Georg Carl Wilhelm, 1849-1889.
(7139)

Velloso, José Mariano da Conceição, 1742-1811.

FLORAE FLUMINENSIS,/SEU/ DESCRIPTIONUM PLANTARUM PRAEFECTURA/FLUMINENSI SPONTE NASCENTIUM/ LIBER PRIMUS/..../
Fl. Flum.; Fl. Flum. Ic. (830, 1055, 4063, 5259, 6301)
Text, 1825 post Apr (order to print 25 Apr 1825).
Atlas, 1835; 11 volumes ('1827'; see Bibl. Fr. **1836**: 34. 16 Jan 1836).
The note 'initio 1825' in ICBN sub case 4063 is an erroneous interpretation of the title-page line which says "Flumine Januario 1825", which means "Rio de Janeiro 1825." The names are attributed to 'Arrab.' by Steudel in his Nomenclator. This refers to the editor of the text as well as the Icones, Fr. Antonio de Arrabida. The text was reprinted with different pagination in Arch. Mus. Nac. Rio de Janeiro, vol. 5, 1881.
Ref.: Martius, Flora **20**(2) (Beibl.): 9. 1837.
Kuntze, Rev. Gen. **1**: cxlv. 1891.
Borgmeier, Rodriguesia **3**: 77. 1937.

Ventenat, Étienne Pierre, 1757-1808.

DESCRIPTION/DES/PLANTES NOUVELLES/ET PEU CONNUES,/ CULTIVÉES DANS LE JARDIN DE J. M. CELS./..../
Jard. Cels. (9529)

Fasc.	Plates	Dates
1	*1-10*	Sep 1800.
2	*11-20*	1800, sero vel 1801 prim.
3	*21-30*	1801, prob. Mar.
4	*31-40*	1801, prob. Jun.
5	*41-50*	1802, prob. Sep.
6	*51-60*	1802, prob. Feb.
7	*61-70*	1802, prob. Mai.
8	*71-80*	1802, prob. Jul.
9	*81-90*	1802, prob. Sep.
10	*91-100*	1802, prob. Dec. vel 1803 prim.

Ref.: Stearn, Journ. Soc. Bibliogr. Nat. Hist. **1**: 199. 1939.

TABLEAU/DU/REGNE VÉGÉTAL, /..../AN VII./
Tabl. Règne Vég. (1923)
4 Volumes, Jun 1799.
Rev.: Journ. Gén. Lit. Fr. **2**: 163. Jun 1799.

CHOIX/DE PLANTES,/DONT LA PLUPART SONT CULTIVÉES/DANS LE JARDIN DE CELS;/..../
Choix. (2858, 3789, 6544, 6857)

For contents and probable dates of publication of the 10 parts (1803-1808) see Exell and Stearn. It should be noted, however, that the new genera and species of *t. 31-42* (fasc. 6, 7) were published earlier in Mém. Math. Phys. Inst. Nat. Fr. **1**: 1-20 (1807) and those of *t. 43-47* op. cit. **2**: 142-155 (1808).

Ref.: Exell, Journ. Bot. **76**: 181. 1938.
Stearn, Journ. Soc. Bibliogr. Nat. Hist. **1**: 201. 1939.

JARDIN/DE/LA MALMAISON,/..../
Jard. Malm. (3624, 3836, 3868, 6262p, 6277).
For contents and dates of the 20 parts see Stearn (*plates 1-30,* 1803; *31-78,* 1804; *79-120,* 1805).

Ref.: Stearn, Journ. Soc. Bibliogr. Nat. Hist. **1**: 200. 1939.

Vidal y Soler, Sebastian, 1842-1889.

..../PHANEROGAMAE CUMINGIANAE PHILIPPINARUM/..../
Phan. Cuming. Philip. (5036)
1885 sem. 2 (preface dated 24 Jun 1885).

Villars, Dominique, 1745-1814.

HISTOIRE/DES PLANTES/DU DAUPHINÉ./..../
Hist. Pl. Dauphiné (282)
1, Feb 1786.
2, Feb 1787.
3(1), Jul 1788 (pp. 1-580).
(2), Sep-Oct 1789 (pp. 581-end).

Ref.: Breistroffer, Proc. Verb. Mens. Soc. Dauph. Ethn. Arch. nos. 182-184. 1948.

Vogel, Benedict Christian, 1745-1825.
(5007)

Wallich, Nathaniel, 1786-1854.

TENTAMEN/FLORAE NAPALENSIS ILLUSTRATAE/..../
Tent. Fl. Napal. (967, 1500, 2856)
1: 1-24. *t. 1-25.* 1824 sem. 2.
2: 25-64. *t. 26-50.* 1826 quadrim. 3.

Ref.: Tucker, Journ. Arnold Arb. **18**: 260. 1937.
Stearn, Fl. Males. **4**(5): ccxvi. 1954.

A NUMERICAL LIST OF DRIED SPECIMENS OF PLANTS IN THE EAST INDIA COMPANYS/ MUSEUM,..../
Num. List. (3323, 4264, 5400)
1828-1849; for details see Kuntze.

Ref.: Kuntze, Rev. Gen. **1**: cxlv. 1891.

PLANTAE/ASIATICAE RARIORES;/..../
Pl. Asiat. Rar. (2821, 5155)
1829-1832, for details see Sherborn and Stearn.

Ref.: Sherborn, Journ. Soc. Bibliogr. Nat. Hist. **1**: 197. 1939.
Stearn, Fl. Males. **4**(5): ccxvi. 1954.

Walpers, Wilhelm Gerhard, 1816-1853.

REPERTORIUM/BOTANICES SYSTEMATICAE./..../
Repert. (3122, 3561)
Six volumes, 1842-1847, each published in five parts, of which many are reviewed in Flora and Botanische Zeitung.

Walter, Thomas, 1740-1789.

FLORA/CAROLINIANA,/..../
Fl. Carol. (6421, 7549)
1788.
Facsimile edition, Arnold Arboretum 1946.

Watson, Sereno, 1826-1892.

/..../UNITED STATES GEOLOGICAL EXPLORATION OF THE FORTIETH PARALLEL./CLARENCE KING, GEOLOGIST-IN-CHARGE./BOTANY./
Bot. U.S. Geol. Expl. 40th Par. (7029)
Professional papers of the engineer department, U.S. army/no. 18./report of the/geological exploration of the fortieth parallel. Volume V.
1871.

Webb, Philip Barker, 1793-1854; Berthelot, Sabin, 1794-1880.

HISTOIRE NATURELLE DES ILES CANARIES ....
Hist. Nat. Iles Canaries (2997)
1835-1850; for full details on dates see Stearn.

Ref.: Stearn, Journ. Soc. Bibliogr. Nat. Hist. **1**: 55. 1937.

Weddell, Hugh Algernon, 1819-1877.

CHLORIS ANDINA./..../
Chlor. And. (2973)
2 Volumes, 1855-1861, published in 16 parts, see Sherborn and Woodward. The signatures are dated, but these dates do not always agree with the dates of publication as established by Sherborn and Woodward. The two volumes of the Choris Andina constitute the sixth part of Francis de Castelnau's Expédition dans les parties centrales de l'Amérique du Sud.

Ref.: Sherborn and Woodward, Ann. Mag. Nat. Hist. ser. 7. **8**: 164. 1901, reprinted in Fl. Males. **4**(5): ccxvii. 1854.

MONOGRAPHIE/DE LA/FAMILLE DES URTICÉES/..../
Monogr. Urt. (1988)
1856/1857. Pages 1-400 are taken to have been published in 1856 in between fasc. 12 and 13 of Blume, Mus. Bot. vol. 2. Fasc. 13-17 of Blume are taken to precede pages 401-592, published in 1857. See Robinson and v. Steenis-Kruseman.
The Monogr. Urt. is a reprint (preprint?) from the Nouv. Arch. Mus. Hist. Nat. Paris **9**: 1856/7.

Ref.: Robinson, Philip. Journ. Sci. C. Bot. **5**: 471. 1910.
v. Steenis-Kruseman, Fl. Males. **4**(5): ccxvii. 1954.

Rev.: Kew Journ. Bot. **9**: 347. 1857.

Welwitsch, Friedrich Martin Josef, 1806-1872.

APONTAMENTOS PHYTO-GEOGRAPHICOS/..../
Apont. (3589, 7346)
Dec 1858(?) in Annaes do Conselho Ultramarino **1**: 527-592. Dec 1858. It is possible that the reprint, although dated 1858, appeared only at the end of 1859 (Index Kewensis 1299); the last date in the abovementioned Annals on p. 593, which is the last page of the volume, is 15 Nov 1859, although this part bears the date Dec 1858!

Ref.: Britten, Journ. Bot. **33**: 70. 1895.

SYNOPSE EXPLICATIVA DAS AMOSTRAS DE MADEIRAS E DROGAS MEDICINAES ....1862.
Syn. Mad. Drog. Med. Angola (8397)
1862.

Wendland, Hermann, 1825-1903.
(542, 543, 639)

Wendland, Johann Christoph, 1755-1828.

BOTANISCHE/BEOBACHTUNGEN /..../1798./
Bot. Beob. (1313, 2570, 7932)
The generic descriptions on pp. 36-41 precede the specific name in which the new generic name is first used.

COLLECTIO/PLANTARUM/..../
Coll. Pl. (4036, 4037, 4038, 5990, 9028)
3 Volumes, 1805-1819.

For dates of publication see Jackson and Kuntze, reprinted in Fl. Males. **4**(5): ccxvii. 1954. However, vol. 2(1) was published in 1808.

Ref.: Jackson, Bull. Herb. Boiss. **1**: 297. 1893.
Kuntze, Rev. Gen. **3**(2): 162. 1898.
v. Steenis-Kruseman, Fl. Males. Bull. **3**: 742. 1960.

Wernischeck, Jakob, -1804.

GENERA/PLANTARUM/..../
Gen. Pl. (982, 2412)
Ed. 1, 1763, ante Oct.
Ed. 2, 1764, page for page reprint, title differs.
Ed. 3, 1766, different pagination, title from ed. 2.

Rev.: Journ. Enc. Bouillon **1763**(7²): 138. 15 Oct 1763.

Wied-Neuwied, Maximilian Alexander Philipp zu, 1782-1867.

REISE/NACH/BRASILIEN/..../
Reise Bras. (5144)
Vol. 1, 1820; 2, 1821 sem. 1; Atlas 1821.

Rev.: Flora **4**: 294. 28 Mai 1821 (vol. 2).

Wiggers, Friedrich Heinrich,

PRIMITIAE/FLORAE HOLSATICAE/ QVAS/PRAESIDE/..../KERSTENS/ ..../PVBLICE DEFENDET/AVCTOR/ FRIDERICVS HENRICVS/WIGGERS /..../
Prim. Fl. Hols. (1119, 9592)
29 Mar 1780.

From "Praemonita": "Nomina pleraque Linnaeana sunt, reliqua celeberrimi Praeceptoris Weberi, ex scriptis & praelectionibus eiusdem collecta, aut aliorum auctorum, quos suo quemque loco nominatos invenies." Evidently the book was largely compiled from the writings of Georg Heinrich Weber, 1752-1828, who published a supplement to it in 1787.

Wight, Robert, 1796-1872.

ICONES/PLANTARUM INDIAE ORIENTALIS,/..../
Ic. (1565)

6 Volumes, 1838-1853, for dates of publication see Merrill.

Ref.: Merrill, Journ. Arnold Arb. **22**: 222. 1941, reprinted Fl. Males. **4**(5): ccxviii. 1954.

Wight, Robert, 1796-1872; Arnott, George Arnott Walker, 1799-1868.

PRODROMUS FLORAE/PENINSULAE INDIAE ORIENTALIS:/..../
Prodr. (3452, 3553, 3863, 4172)
Vol. 1 (all publ.) Oct prim. 1838.
Bentham (Comm. Legum. Gen. 1837) states that Arnott alone did the Leguminosae.

Wikström, Johan Emanuel, 1789-1856.
(3286)

Willdenow, Carl Ludwig, 1765-1812.

..../FLORAE BEROLINENSIS/ PRODROMUS/..../1787./
Fl. Berol. Prodr. (2467)
From a review in the Obs. Phys. Hist. Nat. Arts of Jan 1789 it is clear that the book was published in parts. The review states that some of the parts appeared in 1788. Further information is required.

..../SPECIES PLANTARUM/..../
Sp. Pl. (26 references)

Vol.	Dates
1(1)	Jun 1797.
(2)	1798.
2(1)	Mar 1799.
(2)	1799 vel Jan 1800.
3(1)	1800.
(2)	1802, ante 10 Nov.
(3)	1803, post Mar.
4(1)	1805.
(2)	1806.
5(1)	Mar 1810.
(2)	1830.
6(1)	1824.
(2)	1825.

5(2) by Schwaegrichen, 6(1) (2) by Link.
Ref.: Kuntze, Rev. Gen. **1**: cxxxiv. 1891; **3**(2): 159. 1898.
Schubert, Rhodora **44**: 147. 1942.
Pichi-Sermolli, Webbia **8**(1): 220. 1951.
Dawson, The Banks Letters 872. 1958.

HORTUS BEROLINENSIS,/SIVE/ICONES ET DESCRIPTIONES,/..../
Hort. Berol. (2163, 4960)
1803-1816; for contents and dates of the 10 parts see Stearn.
Ref.: Stearn, Journ. Bot. **75**: 233. 1937, reprinted Fl. Males. **5**(4): ccxviii. 1954.

..../ENUMERATIO/PLANTARUM/ HORTI REGII BOTANICI/ BEROLINENSIS,/..../
Enum. Pl. Hort. Berol. (492, 985, 4036, 4037, 4038, 6350, 9101)
Apr-Jun 1809.
A supplement was edited by v. Schlechtendal, dated 1813, issued 1814 sem. 2.
Ref.: Stearn, Journ. Bot. **75**: 234. 1937, Fl. Males. **4**(5): ccix. 1954.

Wilson, Percy, 1879-1944.
(4190, 4195)

Wimmer, Christian Friedrich Heinrich, 1803-1868.

FLORA VON SCHLESIEN./..../1832./
Fl. Schles. (3682a)
1832 (preface dated 2 Feb 1832).

Winslow, Charles Frederick, 1811-1877.

THE "BIG TREE."
Calif. Farmer **2**: 58. 24 Aug (1854) (543)
Quoted in part and not entirely accurately by W. J. Hooker, Journ. Bot. Kew Misc. **7**: 26-29 (1855).

Wurmb, Fredrik (Baron) van, -1781.
(575)

Zea, Francisco Antonio, 1770-1822.
(356)

Zinn, Johann Gottfried, 1727-1759.

CATALOGUS/PLANTARUM/HORTI ACADEMICI ET AGRI/ GOTTINGENSIS/..../
Catal. (459, 1119, 1482, 2261, 2884, 5353, 8130, 9592)
1757 (preface dated 20 Apr 1757).

Zippelius, Alexander, 1797-1828.
(1332)

(to be continued)

NEWS AND NOTES

THE NEW YORK BOTANICAL GARDEN

The herbaria of The New York Botanical Garden as a result of extensive renovation of the Museum Building housing the herbaria have been closed since June of 1960. Although initial schedules pre-supposed the completion of renovation operations within 120 days, it remains unlikely that the Garden's herbarium collections will be accessible to either Garden staff or visitors until July of this year.

During the period of the herbaria closure, more than a hundred requests for loans of herbarium material have been received at the Garden. That the specimens of a considerable number of these requests may no longer be needed is suggested by the cancellation of quite a few earlier made applications for loans.

In view of the probability that the need of many of the still outstanding requests has expired, we request all of our correspondents to submit a renewal of requests for loans, to become effective in July — or as soon thereafter as conditions permit. We hope that our colleagues throughout the world will be understanding of this interruption in the normal course of collaboration.

Bassett Maguire,
Head Curator.

NOTICES OF BOOKS

Bibliography of Eastern Asiatic Botany Supplement I

Walker, E.: A bibliography of Eastern Asiatic Botany, Supplement I. Sponsored by the National Science Foundation, Washington D.C., U.S.A. Published by the American Institute of Biological Sciences, 2000 P. Street, N.W., Washington 6, D.C., U.S.A. 1960 (552 pp.).

This first supplement to the classical Merrill and Walker Bibliography of Eastern Asiatic Botany (1938) extends its coverage through the year 1958 thus bringing the work up to date again. The compilation of this supplement is a major achievement to be compared only with that of the original work, the more so since most of the publications now come from Eastern asiatic authors and periodicals. The Bibliography with its supplement constitutes a standard botanical reference work of the first order.

Galanthus and Leucojum

F. C. Stern — Snowdrops and Snowflakes. A study of the genera Galanthus and Leucojum. With two illustrations in colour by E. A. Bowles and one in colour and line drawings by Margeret Stones. The Royal Horticultural Society, Vincent Square, 128 pp., 20 figures, 14 plates, map showing distribution. 1956.

This monograph of the genera *Leucojum* and *Galanthus* is very well documented and profusely illustrated.

The history and early literature, the taxonomy, the morphology, cytology and distribution are concisely treated and each species is well described and illustrated. Good keys are provided.

Selected orchidaceous plants

Roy Grubb — Selected orchidaceous plants, part 1, printed and published by Roy & Ann Grubb, 62 Chaldon Common Road, Caterham, Surrey, Great Britain.

The edition is limited to 1450 copies and will not be reprinted. The entire work will be issued in six parts, with 50 coloured plates. Part 1, 42 pp.

Plants of Prince Edwards Island

David S. Erskine: The plants of Prince Edwards Island. Publ. as publ. 1088 of the Plant Res. Inst., Ottawa, Dec. 1960. (270 pp., introd. on the vegetation, annotated list of species with distribution maps, 1 geogr. map. Price $ 1.50).

Bryology

Leo F. Koch: Bryology. (19 pp., S.L. bibliography series, New York, 1961).

Flora of Tropical East Africa

C. Jeffrey: *Aizoaceae* (37 pp., 11 figs., London 1961, price 4 S.).

Floras of the World

S. F. Blake: Geographical guide to Floras of the world, part II; Western Europe. Publ. as Misc. Publ. no. 797 by the S. Dept. of

Agric., Febr. 1961. (742 pp., introduction, alphabetical lists of floras arranged to countries, general author index. Price $ 2.75).

California Spring Wildflowers

PH. A. MUNZ: California spring Wildflowers. Publ. by the University of California Press, Berkeley and Los Angeles, 1961. (122 pp., 173 figs. in black and white, 96 color photographs, 2 maps. Price $ 2.95).

Flora Malesiana

Flora Malesiana Ser. I, vol. 6, pt 1., Dec. 1960. (154 pp.).

DING HOU: *Thymelaeaceae* (pp. 1-48; 22 figs.).

B. L. VAN DER LINDEN: *Staphyleaceae* (pp. 49-59; 2 figs.).

M. JACOBS: *Capparidaceae* (pp. 61-105; 33 figs.).

B. MOELIONO: *Campanulaceae* (pp. 107-141; 22 figs.).

M. JACOBS: *Juglandaceae* (pp. 143-154; 9 figs.).

Flora of the U.S.S.R.

Flora S.S.S.R., ed. Šiškin et Brobrov Vol. *30*. Publ. by Acad. Sci. U.S.S.R., Moscou/ Leningrad, 1960. (xxiv + 732 pp., 40 plates; *Hieracium,* by A. Ja. Juksip).

Woods of Italy

R. CIFERRI & S. PIGNATTI: La facile identificazione delle erbe infestanti d'Italia. (Easy identification of noxions weeds of Italy). Publ. as Manuali di Fitoiatria Vol. 4, Soc. Ital. di Fitoiatria, Pavia; 1960. (pp. 112, 27 tables with numerous figs., identification lists).

Fossilium Catalogus

Fossilium Catalogus. II: Plantae, ed. by W. Jongmans, pars 45. Filicales, Pteridospermae, Cycadales 18, W. JONGMANS & S. J. DIJKSTRA. (pp. 1597-1686, *Marzaria - Neuropteridium.* Publ. by W. Junk, the Hague, March 1961. Price D.fl. 27.50, subscription price D.fl. 24.50).

Flora of Chile

C. M. PIZARRO: Sinopsis de la flora Chilena. Publ. by Univ. of Chile, Santiago, 1959. (840 pp., 237 tables numerous figs. 5 coloured plates. Introduction, alphabetical list of families with identification keys to genera, glossary, bibliography, indices. Price $ 31.80).

THE KARL P. SCHMIDT FUND

The KARL P. SCHMIDT FUND has modest sums available to assist persons wishing to study at the Chicago Natural History Museum. Grants will be made for study in any of the four fields encompassed by the museum: anthropology (with a natural history orientation), botany, geology (including paleontology), and zoology. An applicant should describe the study proposed in brief terms, state the length of time he wishes to study at the museum and the amount of money needed, and name one reference.

Applications should be mailed to: Chairman, The Karl P. Schmidt Fund, c/o Chicago Natural History Museum, Roosevelt Road and Lake Shore Drive, Chicago 5, Illinois.

REQUEST

Prof. G. H. N. TOWERS (Dept. of Botany, McGill University, Montreal 2, Que., Canada) is anxious to obtain material — either small quantities of viable seeds or 5-10 gm. samples of air-dried leaves — of species of *Impatiens* (other than *balsamina, oliveri,* and *sultani*). Material should be marked "Biological Specimens, of No Commercial Value; to be used only for Chemical Analysis".

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Members are requested to pay their membership fees to the regional treasurers.

Members in countries without regional treasurers are requested to make payable their subscriptions to *Messrs Vlaer & Kol, Utrecht, Netherlands,* crossed: *"a.c. International Bureau for Plant Taxonomy".*

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Regular Members	25.–	8.15.–	95.–	130.–
Associate Members	10.–	3.10.–	38.–	52.–

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U.S.A.: Dr. R. C. Rollins, Gray Herbarium, Harvard University, 22 Divinity Avenue, Cambridge 38, Mass.

☆

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NOMENCLATURE OF DEUTEROMYCETES

G. W. Martin (Iowa City, Iowa)

In a recent communication discussing the nomenclatural treatment of what he calls conventional systems and dealing chiefly with the imperfect fungi as an example of such a system, Donk (Taxon 9: 103—104. 1960) makes the following statement:

"Keeping in mind that the ultimate type of a name is a specimen, one will readily notice that in the case of the Fungi imperfecti there is something 'wrong' with the type specimen, for it is not taken to represent a complete plant but only a particular portion of one. The conventional element here is that it is agreed that such portions may receive names as if they were normal types representing complete individual plants."

It is, of course a matter of common knowledge that many imperfect fungi do represent stages in the life cycles of fungi of which the perfect stages are known. To such fungi, the statement quoted applies. The names given to their imperfect stages may continue to be used, but the subordinate status of such names is very generally recognized. In our current classifications, the principle involved is carried further, since many species of Mucorales without known zygospores and a number of Uredinales without teliospores are by common consent referred to these respective orders. This is on the assumption, abundantly justified by the evidence available, that if a perfect stage exists and is discovered it will prove to be of the expected general type. This is also true of many other imperfect fungi. It may be presumed that in the case of an *Aspergillus* or *Penicillium* not now known to have a perfect stage, such a stage, when found, will be a member of the Eurotiales; that of a *Fusarium* one of the Nectriaceae or a related family. Numerous other examples, ranging from a high to a very low degree of probability, might be cited.

It is difficult to estimate the number of named species of imperfect fungi which are known to be connected with a perfect stage, but something less than one-half of the total would probably be a generous guess. If to these are added those whose probable perfect stage, if it exists, can be reasonably postulated, there will still remain a very large number of imperfect fungi, perhaps about half of the total, whose perfect stage is not known and whose hypothetical perfect stage cannot be postulated with any degree of precision and *may not exist.* Are these not "normal" specimens?

Donk's statement clearly implies that all imperfect fungi must have a perfect stage. This hypothesis is certainly widely held, but it is not based on adequate evidence and should not be stated as a fact, or even as an acceptable theory, until much more proof is submitted to warrant its acceptance. Certain recently discovered facts have weakened such evidence as exists and certainly other possibilities must be considered. I mention four, all of which have been suggested previously, but none of which has as yet been adequately explored.

1. Some of the imperfect fungi may in the past have had a perfect stage which has been permanently lost in the course of evolution.

2. Some imperfect fungi may have been derived from groups of organisms, the Actinomycetes, for example, which have no provision for caryallagy, at least in recognizable form such as usually accompanies the perfect stages in fungi, and have never developed the structures in which this is expressed.

3. Fungi belonging to either of the preceding groups may have continued to evolve independently as imperfect fungi.

4. Strains of imperfect fungi, with known perfect stages, may have developed independently of the perfect stage and of strains still connected with it to the point where they are morphologically distinct and incompatible with the perfect stage and its connected strains.

The existence in many such fungi of multinuclear cells containing nuclei with different potentialities, and the processes described as parasexuality, are among the known phenomena which might permit such development independently of any perfect stage.

This note is not intended to prove anything about the origin or origins of the Deuteromycetes. Certainly, anyone who chooses to accept, as provisional, the hypothesis that all imperfect fungi must now have a perfect stage, has the right to do so, and can submit a considerable body of evidence in its favor. But equally certainly it remains a hypothesis which cannot be proved in the light of our present knowledge, and, as such, it has no claim to consideration in connection with the formulation of nomenclatural rules. For such purposes, we must accept organisms as we find them, not as we think they ought to be.

Doubtless mycologists of a century and more ago were convinced on what seemed to them to be valid considerations that the lichens were autonomous organisms; that the Gasteromycetes constituted a natural and well-defined group; that the Uredinales were sharply separated from the so-called Hymenomycetes. Doubtless there are some to-day who would defend some or all of these opinions, but the trend is certainly away from them. Yet all are embodied in the current Code on the ancient basis and are assigned separate starting points as a result of these older and at present largely discredited hypothetical opinions. Surely it is not necessary, in discussing the rules, to inject another questionable hypothesis which may, in the future, seem as unsound as those I have cited and which are now explicitly recognized in the Code. The present situation, which seems to many less than satisfactory, need not be made more complicated by the introduction of a hypothesis which, however legitimate a subject for discussion in other contexts, can only confound current confusion in nomenclature.

OUR CORPUS AND CARRPOS*

J. Proskauer (Berkeley, Calif.)

Some five years ago Professor J. D. Carr (Belfast) described a new liverwort, belonging to the Marchantiales, from Australia. The name he chose for it has raised a number of questions concerning interpretation of our Code, and the lack of certain provisions in it. I am currently preparing a manuscript on the morphology of the plant for publication elsewhere, but wish to take up the nomenclatural matters here.

Carrpos nomen genericum novum.

Basionym: *Monocarpus* Carr, Australian Journal of Botany 4: 176, 1956; non *Monocarpus* Post et Kuntze, Lexicon generum phanerogamarum, p. 372, 1903 (≡ *Monocarpia* Miquel).

Type species: *Carrpos sphaerocarpos* (Carr) comb. et corr. nov. (*Monocarpus sphaerocarpus* Carr, loc. cit.).

The new generic name honors Professor and Mrs. J. D. Carr. It is arbitrarily formed and carries masculine gender. Its stem is *Carrp-*. The specific epithet, according to Prof. Carr (in litt., 21. vi. 61), is a noun used in apposition, viz., the generic name *Sphaerocarpos* Boehmer, in Ludwig.

a) Is *Monocarpus* Carr a later homonym? The actual entry by Post and Kuntze (loc. cit.) reads, in the alphabetical sequence of their "Lexicon":

"Monocarpia Miq. corr. = us
Monocarpus Miq. 1865/6, Anonaceae"

The name adopted by them was *Monocarpus*. What they intended and thought they had done was to produce merely a correction of Miquel's name. The reason for their actions can be seen by reference to Articles 11b and 5b of their "Codex brevis maturus", bound in the same work. This was a draft code, to be submitted to the International Botanical Congress in Vienna. What is relevant is what they actually did under our Code. I hold that they validly published a new name, *Monocarpus* Post et Kuntze, which however is illegitimate as being unnecessary, but has to be considered for purposes of homonymy. Valid publication, not legitimacy, is what counts. The basionym citation would seem to be sufficient. Especially relevant is the example of *Rubia* and *Rubus* as different names under Art. 75, 1956 Code. Drs. Papenfuss, Silva, and Stafleu concur in this opinion.

The other possibility would be to interpret the *Monocarpus* of Post and Kuntze as a mere orthographic variant of *Monocarpia* Miquel, and not as a new name. The trouble with this argument is simply that if one *Monocarpus* is an orthographic variant of *Monocarpia*, another is also, whether based on the same type or not. (The manipulation of a patently different name as not a new name somehow savors more of theological than nomenclatural dialectics.) If a name is very similar to another based on the same type, the two are to be treated as "mere orthographic variants" and not as "homonyms" (implied passim in Arts. 64, 75), a very useful provision as regards priority, but one which by no sleight of hand can undo the actual valid existence of such a variant. If *Monocarpus* as used by Post and Kuntze is a variant of *Monocarpia* Miquel, then *Monocarpus* Carr is a later homonym of a validly published variant of *Monocarpia* Miquel. It is just as dead this way round. In a closely

*) Written during the tenure of NSF grant G-8701.

comparable case, that of *Tripteris*, this second interpretation has recently been advanced by Rickett and Stafleu (Taxon 9: 158, 1960) as the argument for rescinding an effective conservation as unnecessary. I consider this highly dubious, especially as Dr. Stafleu (in litt.) has stated the opinion that Thunberg very probably intentionally, rather than accidentally, corrected the Linnean name *Triopteris*.

b) The epithet "*sphaerocarpus* Carr" must, may, or may not, be corrected to "*sphaerocarpos*"? Article 73 can be construed to support any one of these contentions. The epithet is a noun in apposition, standing for the generic name *Sphaerocarpos* [Micheli] Boehmer, in Ludwig, thus spelled correctly mercifully both by priority (the validating author) and etymology. For fifty years it has been so written on this side of the Atlantic, while European authors in general have persisted to use the incorrect version "*Sphaerocarpus*". The latter also was used by Prof. Carr, presumably owing to unfamiliarity with provisions of the Code. Used as a generic name, the spelling *Sphaerocarpos* alone can prevail. Logic would have it that this same generic name when used as a substantive epithet may also only be spelled in this one correct manner. Otherwise we end up with the ridiculous situation that even in the same sentence the generic name has to be spelled one way and a substantive epithet standing for that generic name has to be spelled slightly differently. Art. 73 is ambiguous and should be modified to clarify this situation, which was clearly not contemplated. In the liverworts, apart from *Thallocarpus* Lindberg, generally in synonymy these days, we can forget about the *-carpus/-carpos* problem, for as I have been pointing out, luckily Corda wrote *Ricciocarpos* when he erected that genus.

Summary

Monocarpus sphaerocarpus Carr is renamed *Carrpos sphaerocarpos*. Certain aspects of the homonym rule are discussed. Attention is drawn to the lack of provisions in the Code concerning the correctability of generic names when used as substantive epithets.

CONTRIBUTION A L'ETUDE MONOGRAPHIQUE DU GENRE *Bombax* s. l.

II. LA TYPIFICATION DE *B. Ceiba* L.

André Robyns (Bruxelles)

Dans le Species Plantarum (1753, pp. 511—512), Linné classe sous le nom générique de *Bombax* L., trois espèces: *B. Ceiba* L., *B. pentandrum* L. et *B. religiosum* L. *B. pentandrum* fut transferré en 1791 par Gaertner dans le genre *Ceiba* Gaertn., sous l'appellation *C. pentandra* (L.) Gaertn., tandis que *B. religiosum* devint, en 1931, *Cochlospermum religiosum* (L.) Alston. Seul *B. Ceiba* reste inclus dans le genre *Bombax* L. et cette espèce doit donc typifier le genre, contrairement à la proposition de M. L. Green (2) (voir p. 157).

L'interprétation et la typification de *B. Ceiba*, fondamentales pour la délimitation du genre *Bombax* L., ont donné lieu a controverse, l'espèce étant considérée par certains comme asiatique et par d'autres, de loin les plus nombreux, comme américaine.

Pour élucider cette question, il y a lieu d'étudier le texte original de Linné, ainsi que tous les autres documents bibliographiques qui s'y rapportent.

I. Texte original de Linné (1753, p. 511).

1. BOMBAX foliis digitatis, caule aculeato. *Ceiba.*
Xylon foliis digitatis, caule aculeato. *Fl. zeyl.* 221. *Hort. ups.* 148.
Xylon caule aculeato. *Hort. cliff.* 75. *Roy. Lugdb.* 437.
Gossypium arboreum, caule spinoso. *Bauh. pin.* 430.
Moul-elavou. *Rheed. mal.* 3. *p.* 61. *t.* 52.
Habitat in India *utraque.*

II. Historique de l'interprétation.

Nous nous bornerons ici à rapporter l'interprétation des botanistes qui ont particulièrement traité le sujet, laissant de coté les innombrables ouvrages et flores où les auteurs se bornent à admettre telle ou telle opinion sans discussion.

R. C. Bakhuizen van den Brink (1), qui fut le seul à faire une révision de la famille des *Bombacaceae*, reconnaît en *B. Ceiba* une plante américaine, se rattachant à un genre distinct des plantes asiatiques. Etant donné que Linné suppose que *B. Ceiba* se rencontre tant dans les Indes occidentales que dans les Indes orientales, Bakhuizen van den Brink écrit (pp. 187—188): "By this error and his poor description, nobody is able to make out what he (Linné) meant, but after all he actually must have in mind an american plant. Not only in the generic description (Gen. Plant. 6e ed. 1764), he speaks of "calyx persistens" and moreover calls the species after an american name, *B. Ceiba*, but in the 2d ed. of the Spec. Plant. it appears much more clearly, that he must have in mind the american plant, for he refers to Jacquin's description".

En 1929, M. L. Green (2), dans "Proposals by British Botanists" au Congrès International de Botanique de Cambridge, 1930, suggère la proposition suivante (pp. 160—161), que nous transcrivons ici: "580. *Bombax* L. Sp. Pl. 511; Gen. Pl. ed. 5, 227. *B. malabaricum* DC. (*B. Ceiba* L. partim), the only element of *Bombax* L. (1753) still retained in the genus. *Bombax Ceiba* L. sensu stricto and *B. pentandra* L. are synonyms of *Ceiba pentandra* (L.) Gaertn. and *B. religiosum* L. is *Cochlospermum Gossypium* DC.". Green admet donc que l'espèce est asiatique, mais elle rejete l'épithète spécifique, car, dans son opinion, *B. Ceiba* est constitué de deux espèces se rattachant à des genres distincts. Cette conception arbitraire fut rejetée par la majorité des botanistes.

C. X. Furtado (3), dans une mise au point détaillée, conclut (p. 180) que: "The genus must be typified on the American *Bombax Ceiba* L. (1753) sensu stricto, the only species left in the genus out of the original three". Pour l'espèce asiatique, il admet le nom de *Salmalia malabarica* (DC.) Schott et Endl. Son argumentation est basée, en ordre principal, sur l'interprétation de la description générique de *Bombax* dans Linné, Genera Plantarum ed. 5 (1754) et plus particulièrement sur les mots "*calyx persistens*" et sur la croix qui suit le nom *Bombax*. Cette croix signifie que la description a été faite d'après du matériel séché et non d'après une plante vivante ou une figure. De ce fait, il n'admet pas la planche de H. van Rheede tot Draakestein, Hortus Indicus Malabaricus, 3, tab. 52 (1682), comme représentant *B. Ceiba*.

En 1943, A. Dugand (4) publie un important travail sur la revalidation de *B. Ceiba* comme espèce-type du genre *Bombax*. Il donne (p. 61) une définition "sensu maxime strictissimo" de *Bombax* L. et de *B. Ceiba* fondée sur *B. quinatum* Jacq., une espèce américaine. Comme Furtado, cet auteur admet donc que l'espèce linnéenne est américaine et son interprétation est basée sur l'oeuvre de N. J. Jacquin, Enumeratio Systematica Plantarum, parue en 1760 et dont Linné reprend les diagnoses dans le Species Plantarum ed. 2 (1763, 2, pp. 959—960).

D. Chatterjee et M. B. Raizada (5 et 6), alignant leurs points de vue sur celui de Furtado, adoptent le nom générique de *Salmalia* Schott et Endl. pour désigner les plantes asiatiques, le nom de *B. Ceiba* étant réservé à une plante américaine.

III. Analyse du texte original de Linné (1753).

La diagnose de l'espèce est reprise textuellement de Linné, Flora Zeylanica (1747, p. 98) n° 221. Cette flore est basée sur l'Herbier d'Hermann, actuellement conservé au Département Botanique du British Museum (Natural History), Londres *) et qui ne renferme aucun spécimen de *B. Ceiba* (cfr H. Trimen, 7, p. 144). Ceci est normal, car dans l'observation qui suit, Linné écrit: ". . . *secunda* (l'espèce est citée en second lieu dans Flora Zeylanica, alors qu'elle occupe la première place dans le Species Plantarum) *polyandra secundum Rajum*". Linné se réfère à J. Ray, Historia Plantarum, qui à la p. 1899 du volume 2 (1688) reprend littéralement la description de H. van Rheede tot Draakestein, Hortus Indicus Malabaricus, 3, pp. 61—62 (1682). Il s'agit ici, sans contestation possible, d'une plante asiatique, provenant de Malabar, qui est illustrée par une excellente planche: tab. 52, également citée dans le Species Plantarum (1753).

Parmi les autres citations de Linné, figurent encore deux de ses propres oeuvres: Hortus Upsaliensis (1748) et Hortus Cliffortianus (1738).

La diagnose et la distribution de l'Hortus Upsaliensis sont également les mêmes que celles de Flora Zeylanica, mais Linné y ajoute en plus (p. 148): "*hospitatur in Caldario, Arbor* † **). Il en ressort qu'il y avait un spécimen en culture dans une serre chaude au Jardin d'Uppsala en 1748, qui devait être originaire d'Asie, car dans le chapitre "Horticultura Topographica", Linné cite *Xylon* 1.2. (il s'agit de *C. pentandra* et *B. Ceiba*) dans la classe des plantes "*Calidae* — 15. *Indicae orientales* — a. *Arbores.*"

Dans l'Hortus Cliffortianus, Linné caractérise l'espèce par (p. 75): "*Xylon caule aculeato*", citation reprise par A. van Royen dans Florae Leydensis Prodromus (1740, p. 437). La distribution est ici également: "*utraque India*". Toutefois, Linné ajoute une remarque importante: "*De hujus* (concernant *B. Ceiba*) *et praecedentis synonymis* (concernant *C. pentandra*) *nil certo statuere possimus, cum etiamnum tenellae sunt arbores; et mira apud Botanicos de his ubique confusio est*". *B. Ceiba* et *C. pentandra* étaient donc en culture dans le Jardin de Clifford à Hartekamp (Pays-Bas) en 1736, année ou Linné y séjourna, mais il reconnaît lui-même que les arbres étant trop petits et par conséquent non fleuris, il lui est impossible d'affirmer que tous les synonymes cités sont exacts. Et par la même occasion, il fait part de la confusion qui existait déjà à son époque concernant ce genre! Dans l'Herbier de Clifford, qui est également conservé au Département Botanique du British Museum (Natural History), Londres, il n'y a aucun spécimen de *B. Ceiba.*

Enfin, Linné cite encore comme synonyme C. Bauhin, Pinax Theatri Botanici (1623, p. 430), la seule citation qui se rapporte exclusivement aux Indes occidentales et donc à l'Amérique.

Nous pouvons résumer les données relatives à *B. Ceiba*, que Linné possédait lors de la rédaction du Species Plantarum (1753), comme suit:

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*) Nous tenons à remercier ici le Dr W. T. Stearn pour l'aide qu'il a bien voulu nous accorder lors de notre visite au Département Botanique du British Museum (Natural History), Londres.

**) Dans Linné, Hortus Upsaliensis, le signe † signifie qu'il s'agit d'une espèce mal connue (cfr W. T. Stearn, 8, p. 162).

1. Linné a vu des jeunes plantes stériles en culture au Jardin de Clifford à Hartekamp et au Jardin d'Uppsala, ces dernières étant incontestablement d'origine asiatique.

2. Linné n'a vu aucun spécimen d'herbier.

3. Linné a vu l'excellente planche 52 du volume 3 de l'Hortus Indicus Malabaricus de Rheede tot Draakestein, dont le dessin de l'androcée ne laisse aucun doute sur son appartenance à une espèce asiatique.

4. Enfin, Linné a pu consulter une littérature abondante dans laquelle il a retrouvé certaines diagnoses qui peuvent se rapporter à la plante décrite, mais dont, selon son propre témoignage dans l'Hortus Cliffortianus, il ne peut affirmer l'exactitude. A cette littérature abondante, on peut également attribuer la distribution géographique erronée donnée par Linné.

IV. Evolution de la pensée de Linné après 1753.

Certains auteurs se basent sur l'évolution de la pensée de Linné depuis 1753, pour admettre l'origine exclusivement américaine de *B. Ceiba*.

Dans le Genera Plantarum ed. 5 (1754, p. 227), Linné donne une description détaillée du genre *Bombax*, dont le nom est suivi d'une croix signifiant qu'il a vu au moins un spécimen d'herbier. De fait, dans l'Herbier d'Hermann, il existe un spécimen de *B. religiosum* (*Cochlospermum religiosum*). Il qualifie d'autre part dans sa description le calice de "*persistens*", un caractère propre aux espèces américaines du genre *Bombax* s.l. et non aux spécimens asiatiques ou le calice est caduc. Or, parmi les trois espèces admises par Linné dans son genre, *B. pentandrum* (*C. pentandra*) est la seule a posséder un calice persistant, de telle sorte que c'est à cette espèce qu'il faut attribuer le qualificatif "*persistens*".

En 1760, N. J. Jacquin, dans Enumeratio Systematica Plantarum, signale (p. 26) trois *Bombax: B. pentandrum*, *B. quinatum* Jacq. et *B. septenatum* Jacq., cette dernière espèce étant nouvelle. *B. quinatum* est caractérisé par la diagnose: "*floribus polyandris, foliis quinatis*" et est suivi du synonyme: "Linn. Spec. Pl. 1", qui est *B. Ceiba*. Jacquin croît donc reconnaître dans *B. Ceiba* la plante que lui même décrit sous le nom de *B. quinatum* et cela est d'autant plus compréhensible, que Linné croyait lui même que *B. Ceiba* se rencontrait tant en Asie qu'en Amérique. Mais pourquoi dès lors Jacquin n'a-t-il pas admis le nom de Linné, comme il l'admet pour *B. pentandrum*? Avait-il peut-être des doutes concernant cette synonymie?

Toujours est-il que, dans le Species Plantarum ed. 2 (1763, 2, pp. 959—960), Linné remplace ses propres diagnoses de *B. Ceiba* et de *B. pentandrum* par les diagnoses plus récentes de Jacquin, sans changer toutefois la distribution géographique. Seuls quelques synonymes spécifiquement américains sont ajoutés, à savoir: H. Sloane, Catologus Plantarum quae in Jamaica sponte proveniunt (1696, p. 159) et H. Sloane, A Voyage to the Islands Madera, Barbados . . . and Jamaica, with the Natural History (1725, 2, p. 72). Après Rheede tot Draakestein, il cite également J. Ray, Historia Plantarum (1688).

Dans le Genera Plantarum ed. 6 (1764, p. 351), la croix est omise derrière le mot *Bombax* et Linné ne fait plus mention de *B. religiosum*, dont il a vu un spécimen dans l'Herbier d'Hermann.

Enfin, en 1767, dans le Systema Naturae ed. 12 (2, p. 457), Linné exclut de la synonymie de *B. Ceiba*, toujours caractérisé par la diagnose de Jacquin, la citation de Rheede tot Draakestein qui devient synonyme de *B. heptaphyllum* L., dont la diagnose: "*B. floribus polyandris, foliis septenis*", est celle de *B. septenatum* Jacq.!

Il ressort donc de l'aperçu qui précède, que Linné a été complètement induit en erreur par l'oeuvre de Jacquin et qu'il a changé plusieurs fois d'opinion jusqu'en 1767. Toutefois, l'évolution de la pensée de Linné, si elle doit être prise en considération, ne peut influencer l'interprétation du texte du Species Plantarum (1753), point de départ de la nomenclature botanique.

V. Conclusions.

Notre analyse du protologue montre que le seul document valable, que Linné ait vu lors de la publication du Species Plantarum (1753) et que l'on peut d'ailleurs authentifier avec certitude, est la planche 52 du volume 3 de l'Hortus Indicus Malabaricus de Rheede tot Draakestein (1682). Cette planche devient donc le type nomenclatural de *B. Ceiba*, qui est une espèce asiatique et dont la principale synonymie est la suivante:

Bombax Ceiba L., Sp. Pl., p. 511 (1753), p.p. quoad plantas asiaticas, exclus. syn. Bauhin; id., Sp. Pl., ed. 2, p. 959 (1763), p.p. quoad plantas asiaticas, exclus. syn. Jacquin, Bauhin, Sloane.

B. heptaphyllum L., Syst. Nat., ed. 12, 2, p. 457 (1767), non L., Sp. Pl., ed. 2, p. 960 (1763).

B. malabaricum DC., Prodr., 1, p. 479 (1824).

Gossampinus rubra Ham., Trans. Linn. Soc., London, 15, p. 128 (1827), nom. nud.

Salmalia malabarica (DC.) Schott et Endl., Melet. Bot., p. 35 (1832).

Gossampinus heptaphylla (L.) Bakh., Bull. Jard. Bot. Buitenz., Sér. 3, 6, p. 189 (1924).

G. malabarica (DC.) Merrill, Lingn. Sc. Journ., 5, p. 126 (1927).

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mai 1961.

Bibliographie

(1) Bakhuizen van den Brink, R. C. 1924. Revisio Bombacacearum. — *Bull. Jard. Bot. Buitenz.*, Sér. 3. 6: 161-240, tab. 26-38.

(2) Green, M. L. 1929. Proposals by British Botanists, International Botanical Congress, Cambridge (England), 1930. Nomenclature: 155-195.

(3) Furtado, C. X. 1939. The typification of *Bombax, Gossampinus* and *Salmalia*. — *Gard. Bull. Straits Settl.* 10: 173-181.

(4) Dugand, A. 1945. Revalidacion de *Bombax Ceiba* L. como especie tipica del genero *Bombax* L. y descripcion de *Pseudobombax* gen. nov. — *Caldasia* 2: 47-68.

(5) Chatterjee, D. et Raizada, M. B. 1950. Correct name of indian silk cotton tree (Semal). — *Ind. For.* 76: 154-155.

(6) Chatterjee, D. et Raizada, M. B. 1954. Note on the typification of the generic name *Bombax* L. — *Taxon* 3: 102.

(7) Trimen, H. 1887. Hermann's Ceylon Herbarium and Linnaeus "Flora Zeylanica". — *Journ. Linn. Soc., Bot.* 24: 129-155.

(8) Stearn, W. T. 1957. An Introduction to the Species Plantarum and cognate botanical Works of Carl Linnaeus: 162 (Prefixed to Ray Society's facsimile of Linnaeus, Species Plantarum 1753, 1).

PROPOSED CHANGES IN THE INTERNATIONAL CODE GOVERNING THE NOMENCLATURE OF LICHENS

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> It is the duty of the nomenclator to supply names for natural objects. And lichens are natural objects which come within the sphere of botanical investigation and must be adequately dealt with under the Rules of Botanical Nomenclature. — W. H. Camp, 1947.

Since 1950 the International Code has stipulated that "for nomenclatural purposes names given to lichens shall be considered as applying to their fungal components" (Art. 13, Note 4). Although the intent in incorporating this rule into the Code is sound, the rule as it stands has profound implications that exceed nomenclature and enter taxonomy. A really strict adherence to this rule is not even possible for nonexperimental lichen taxonomists (*i.e.*, all lichen taxonomists) and its acceptance is tantamount to accepting suppositions of which at least some are scientifically questionable or plainly wrong. Still many botanists doubtless find that "... the procedure though arbitrary, is perfectly harmless" (Nannenga 1939). It is discouraging to find how widespread this taxonomically irresponsible attitude is. As the nomenclatural rule for the lichens is now stated, certain valuable taxonomic criteria may actually be outlawed because they may (we do not know) concern both components. The lichenologist should be further disturbed by this rule because he knows that he cannot always differentiate with absolute certainty between some fungal and algal manifestations in the lichens that he studies. The purpose of the present paper is to propose a simple solution to this whole problem.

Lichenologists agree, I think, that a classification expressing the relationships of all fungi — including those in lichens — would be the desirable taxonomy. The old polyphyletic "Lichenes" must go and the fungi of the lichens must be intercalated into the mycological arrangement. This noble aim may someday be fulfilled through the hard work of lichenologists and mycologists, but it will never be achieved by tinkering with the rules of nomenclature. Yet it was to advance this taxonomy that the Code was amended to the version quoted above.

If we accept the application of lichen names as now prescribed by the Code, we must also accept the following:

1. Since the name of a lichen refers only to the component fungus, the taxonomy which that name expresses must be based solely upon mycological considerations.
2. Each "lichen species" contains only one species of lichen fungus.
3. All different "lichen species" contain different species of lichen fungi.
4. The morphology of the lichen fungus is never significantly altered in the lichenized state under which we study it; *i.e.*, the same taxonomic conclusions (leading ultimately to a nomenclature) will be reached regardless of whether the lichen or only the lichen fungus is studied.
5. Any modifications produced in the lichen by the alga — even if these modifications are constant for the lichen — must not be considered taxonomically.

6. The lichens themselves should not have a nomenclature governed by the Code.

7. If the lichens should not have an official nomenclature, the starting point for the nomenclature of the fungi in lichens should be 1821 instead of 1753.

* * *

Under the present Code, the lichen taxonomist is directed to determine which traits of the lichen are purely fungal and to confine his taxonomic attention to them and to the classification of lichen fungi. Regardless of how desirable all this may be, it is a large order because the lichenologist almost never studies the lichen's fungus in the absence of its alga. In fact, the exact influence of the alga on the lichen thallus — especially in the macrolichens — cannot possibly be assessed by herbarium observations; it can be learned only from properly designed experiments. When the fungus is isolated in pure culture, it is found (or it has been up to now) that the unique morphology of the lichen is not reproduced. Is this the failure of technique? Perhaps, but one line of evidence may indicate the contrary. Hale (1957) isolated the fungal component of the common crustose lichen *Buellia stillingiana* Stein. The formless mass of hyphae that developed in culture produced conidia and was identified by Dr. Stanley Hughes as the Fungus Imperfectus *Sporidesmium folliculatum* (Corda) Mason & Hughes, a common wood-inhabiting saprophyte of eastern North America. This discovery suggests a whole array of speculations and may even substantiate the view that the lichen's vegetative morphology (so important in taxonomy at the species level) is largely a product of lichenization. To exactly what extent then is the vegetative morphology of a lichen an intrinsic trait of the lichen fungus?

Now consider two situations: (1) It would come as a great surprise to lichenologists if it were shown that the fungal component of a lichen species is not uniform (does not belong to the same species) throughout the range of that lichen. The Code tacitly and probably rightly assumes the uniformity of the fungal component in "lichen species." Nevertheless it remains that this supposition has never been proved. Asahina (1937) has even suggested that the macroscopically indistinguishable lichens *Lobaria pulmonaria* (L.) Hoffm. (with a green alga) and *L. retigera* (Bory) Trev. (with a blue-green alga) might in reality contain the same fungus and that the different chemistries associated with these lichens might result from the influence of the different symbiont algae. — (2) On the other hand, suppose that two "different" lichens are found to contain the same fungus. This is certainly not all together improbable. In fact, such a report has already been made. Tomaselli (1957) claims that his experiments show that the common, obviously different lichens *Xanthoria parietina* (L.) Th. Fr. and *Caloplaca elegans* (Link) Th. Fr. really contain the same fungal symbiont: "*Xanthoriomyces parietinae.*" In view of the notorious difficulties in the culture of lichen fungi and Tomaselli's (Ciferri & Tomaselli, 1952, 1954) involvement in the publication of more than 150 illegitimate names of lichen fungi, it seems desirable to postpone evaluating his report until the experiments have been repeated by others.

A consideration of the two possible aspects of lichen fungi just mentioned is prerequisite to achieving a realistic nomenclatural rule for the lichen fungi. Yet there is no indication that any real consideration of these matters preceeded the adoption of the present rule.

Some lichenologists now think that to conform to the Code (as well as to produce a truly modern taxonomy), lichenology must be purged of every vestige of phycology. Santesson (1953, 1954a), for example, urges the unification of lichen genera differing only in the alga which they contain [*e.g.*, *Allarthonia* having *Palmella*

(Tetrasporales) should be united with *Arthonia* having *Trentepohlia* (Ulotrichales)] and the supression of the time-honored considerations of the distribution of algae in apothecia (*i.e.*, lecideoid *vs.* lecanoroid apothecia) (Santesson, 1954b). It is not impossible that these views are taxonomically sound and if they are they will ultimately prevail regardless of what the Code may say. Yet I think that no one has pointed out that if the taxonomist regards symbiont specificity and symbiont distribution within the lichen as physiological attributes of the fungal component and accords them high significance, algal considerations will continue to be reflected in the taxonomy and in the subsequent nomenclature. In fact, those lichenologists who claim that lichens are simply parasitized algae could even point to Art. 4, Recommendation 4A (an impertinent recommendation that invades taxonomy) and say that all lichens with different algae should be designated as *formae speciales*!

But the most elusive aspect — and for taxonomy perhaps the most important aspect — of the algae has not been widely considered by lichenologists. It concerns the lichen substances, water-insoluble, predominately aromatic compounds that accumulate in the lichen thallus (summary: Asahina & Shibata, 1954). The crude chemical information that lichen taxonomists since Nylander have elicited by spot tests on thalli is now giving way to the precise determination of the lichen substances themselves. Specific tests of some 75 substances can now be made on fragments of even ancient herbarium specimens by Asahina's crystallographic methods or by the more recent innovations of paper chromatography. Although there is a great diversity of opinion concerning the taxonomic weight that should be accorded to these biochemical data, few workers seem to doubt that biochemistry can substantially advance lichenology. A small but increasing number of lichenologists are even coming to agree — with Yasuhiko Asahina and the late Alexander Evans — that interpreting those lichens with certain kinds of chemical variations as distinct species has more to recommend it than ignoring them all together or even as treating them as infraspecific variations (*cf.* Culberson, 1961). And a few lichenologists have already produced subtle, elaborate, and highly significant classifications which intimately involve chemistry as a taxonomic criterion.

But now a new problem plagues lichen taxonomists. With the nomenclatural provisions of the Code in mind, we must find out whether the production of these substances is a trait of the fungus, the alga, or the lichen. There are a few reports that lichen fungi grown *in vitro* produce the same lichen substances that the corresponding lichens produce (*e.g.*, Thomas, 1939; Castle & Kubsch, 1949) while others claim that the isolated fungi do not produce lichen substances (*e.g.*, Quispel, 1945; Hess, 1959). These seemingly contradictory reports may reflect no more than the diversity of plants studied or the cultural conditions.

It has been suggested that the alga may indirectly determine the type of lichen substances produced by the particular organic nutrients that it furnishes to the fungus (Asahina, 1937). More recently, Hess (1959) claims that the alga may even participate directly in the biosynthesis of lichen substances. In either circumstance the alga itself would determine the lichen substance(s) produced. It seems most probable that in at least some lichens, one or the other of these situations is actually operative and, consequently, under the Code's remarkable provision for the application of the lichen names, there would be no justification for the use of lichen chemistry in taxonomy. But is the development of lichen chemistry — the most significant achievement in lichenology since Schwendener's discovery of the nature of the lichen — to be casually tossed aside as a taxonomic tool? In fact, the ideal of intercalating the lichen fungi into the general fungal arrangement may in the end be advanced by lichen chemistry. Although almost all lichen substances are thought to be restricted to lichens, there are similar compounds in some nonlichenized

fungi and recently the only depsidone ever reported outside the lichens was found in a free-living fungus (Dean *et al.*, 1954). It is conceivable that someday a consideration of biochemistry may be more important than some aspects of morphology for achieving the correct placement of the lichen fungi in the mycological system.

A curious sidelight to the problem of legislating the naming of lichen fungi was pointed out by Ahlner (1953): "The nomenclatural problems deriving from the different starting points for lichens [1753] and for nonlichenized ascomycetes [1821] may be more easily resolved with a common starting point for all generic names (1753)." Presumably the mycologists did not select Fries' *Systema* rather than Linnaeus' *Species Plantarum* as their starting point out of mere capriciousness. Shall we ask the mycologists to select a new starting point for the fungi just because we lichenologists have decided to insist that the lichen fungus itself must become the nomenclatural type of lichen names? Are all these disruptions to botany really necessary?

As I have discussed, we do not know to what extent chemistry or certain aspects of the vegetative morphology of lichens are due to the fungus alone. As our knowledge grows we are sure to become more and more aware that the lichen is a whole that exceeds the sum of its parts. Those lichenologists who equate the subtle relationship expressed as a lichen to that of a parasitic fungus producing a leaf-spot disease on a phanerogamic host grossly underestimate the complexity of lichenization. Yet lichen taxonomists have no choice but to study the whole lichen. Insofar as a nomenclature for the lichen fungus itself is concerned, we have only the vaguest ideas of the problems we shall meet. But we need not be driven to hasty nomenclatural legislation through ignorance. The Code now appropriately excludes, for example, such names as "typicus," "genuinus," etc. for the infraspecific taxon containing the nomenclatural type of the species. A clear precedent for "automatic nomenclature" already exists. To indicate the lichen fungus alone, we could simply add "l. f." ("lichenis fungus") or some other qualifier to the lichen name. I do not now formally make this proposal because someone else may have a better one. Furthermore if any truly different lichens are found to contain the same fungal component, additional nomenclatural provisions will obviously have to be devised.

I know that some lichenologists will fear that changing the Code will invite orgies of name-making for lichen fungi. The possibility exists and, considering the irresponsibility of some botanists, will probably be fulfilled. But we do not need a revolution — "an addition of about 20,000 new names to botanical nomenclature" as Santesson (1954a) fears — to solve the problem. We should work towards formulating a realistic provision for designating the existing lichen names for reuse in referring to the lichen fungi, incorporate our decision into the Code, and make it retroactive. To prepare the way for a new rule, I make the following proposals:

Proposal 1. Art. 13. Delete Note 4 (quoted in the first paragraph of this paper).

Proposal 2. Art. 66. Add as Note 1: "The algal and fungal components of a lichen shall not be considered discordant elements."

References

Ahlner, S. 1953. Some aspects of nomenclature and taxonomy of lichens. P. 809 *in* Proc. Seventh Internatl. Bot. Congr. (1950). [Abstract.]

Asahina, Y. 1937. Über den taxonomischen Wert der Flechtenstoffe. Bot. Mag. [Tokyo] 51: 759-764.

——. & S. Shibata. 1954. Chemistry of Lichen Substances. vi, 240 pp. Japan Society for the Promotion of Science. Tokyo.

Castle, H. & Flora Kubsch. 1949. The production of usnic, didymic, and rhodocladonic acids by the fungal component in the lichen *Cladonia cristatella.* Arch. Biochem. 23: 158-159.
Ciferri, R. & R. Tomaselli. 1952. Saggio di una sistematica micolichenologica. Atti dell'Ist. Bot. & Lab. Crittogam. di Pavia, ser. 5. 10: 25-84.
——. & ——. 1954. Specierum fungorum qui in lichenibus insunt descriptiones. Atti dell'Ist. Bot. & Lab. Crittogam. di Pavia, ser. 5. 10: 253-295.
Culberson, W. L. 1961. *Parmelia pseudoborreri* Asahina, lichen nouveau pour la flore d'Europe, et remarques sur les "espèces chimiques" en lichénologie. Rev. Bryol. et Lichénol. (In press).
Dean, F. M., J. C. Roberts & A. Robertson. 1954. The chemistry of the fungi. Part XXII. Nidulin and nornidulin ("ustin"): chlorine-containing metabolic products of *Aspergillus nidulans.* Jour. Chem. Soc. [London] 1954: 1432-1439.
Hale, M. E. Jr. 1957. Conidial stage of the lichen fungus *Buellia stillingiana* and its relation to *Sporidesmium folliculatum.* Mycologia 49: 417-419.
Hess, D. 1959. Untersuchungen über die Bildung von Phenolkörpern durch isolierte Flechtenpilze. Zeitschr. für Naturforsch. 14b: 345-347.
Nannenga. E. T. 1939. The importance of the gonidia in the classification of the lichens. Rec. Trav. Bot. Néerlandais 36: 538-542.
Quispel, A. 1945. The mutual relations between algae and fungi in lichens. Rec. Trav. Bot. Néerlandais 40: 413-541.
Santesson, R. 1953. The new systematics of lichenized fungi. Pp. 809-810 *in* Proc. Seventh Internatl. Bot. Congr. (1950). [Abstract.]
——. 1954a. Fungal symbionts of lichens. Taxon 3: 147-148.
——. 1954b. The general taxonomy of lichenized fungi. Pp. 9-12 *in* 8ème Congr. Internatl. Bot. Rapp. et Comm. Sects. 18-20. [Abstract.]
Thomas, E. A. 1939. Über die Biologie von Flechtenbildern. Beiträge zur Kryptogamenflora der Schweiz 9 (Heft 1): 1-208.
Tomaselli, R. 1957. Modalità di crescita di vari ceppi italiani di *Xanthoriomyces* (Fungo lichenizzante). Arch. Bot. & Biogeogr. Ital. 33: 78-117.

NOMENCLATURE AND TYPIFICATION OF TWO BOTRYCHIUMS OF THE SOUTHEASTERN UNITED STATES

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During investigations on the evergreen grapeferns (*Botrychium* subg. *Sceptridium*) of the eastern United States, I have noticed some facts which will necessitate important changes in nomenclature. In checking the original publications of the taxa involved, I came to the conclusion that Savigny's description of *Osmunda biternata* (in Lamarck's *Encyclopédie méthodique: Botanique,* and based upon a plant collected by Michaux in the Carolinas prior to 1800) did not seem to pertain at all to the species traditionally referred to as *Botrychium biternatum* (Sav.) Underwood. The holotype, later located at Geneva, confirms this conclusion. Accordingly, the revised synonymy of the two species involved will be presented below, and the evidence in support of it will follow.

Botrychium biternatum (Sav.) Underw., Bot. Gaz. 22: 407. 1896.
Osmunda biternata Savigny in Lamarck, Enc. Bot. 4: 650. 1797.
Botrychium tenuifolium Underw., Bull. Torrey Club 30: 52. 1903.
Sceptridium tenuifolium (Underw.) Lyon, Bot. Gaz. 40: 458. 1905.
Botrychium dissectum var. *tenuifolium* (Underw.) Farwell. Papers Mich. Acad. Sci. Arts, Letters 3: 80. 1924.

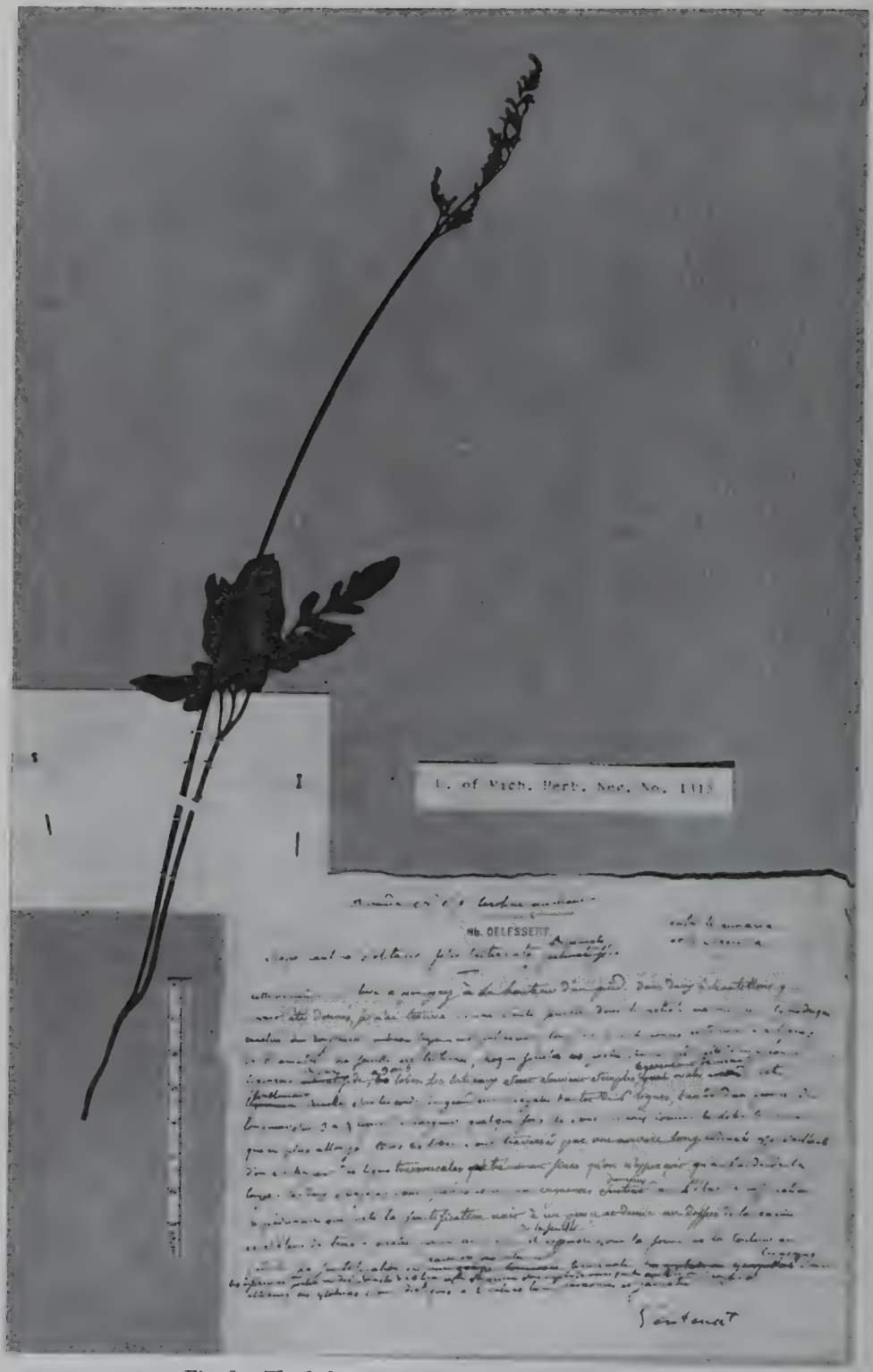

Fig. 1. The holotype of *Osmunda biternata* Sav. (Geneva)

Botrychium lunarioides (Michaux) Swartz, Syn. Fil. 172. 1806.
Botrypus lunaroides Michx., Fl. bor. Am. 2: 274. 1803.
Botrychium biternatum ("Savigny") Underw., Bot. Gaz. 22: 407. 1903, as to plant described, *non Osmunda biternata* Savigny.
Sceptridium biternatum ("Savigny") Lyon, Bot. Gaz. 40: 457. 1905, *non Osmunda biternata* Savigny.

The specific epithet *biternatum* was falsely fixed in its application by Underwood, who stated (1896) that "The specimen in the Michaux Herbarium at Paris is badly folded, overlapping itself in such a way as to obscure some of its characters. Yet it is clearly the plant we have seen growing in the south ... The specimen bears no data as to time of collection except the brief record ' "in pascuis sabulosis juxta Charleston.' " Underwood applied the name to a small, much-divided species with flabellate segments and the fertile structure closely approximate to the sterile blade. The specimen he noted is in the Muséum d'Histoire Naturelle; it is the holotype of *Botrypus lunarioides* Michaux (C. V. Morton negative no. 3371, US, photographed June, 1954). Underwood's conclusion that this is the species which Savigny named *Osmunda biternata* is erroneous. Savigny's description, unusually complete for that era, and a study of the holotype, leave no doubt that his plant is the species which Underwood later (1903) described as *Botrychium tenuifolium*, a large grapefern with relatively undivided leaves, the segments pinnate in plan and the fertile structure well separated from the sterile blade.

Because of the close correspondence of Savigny's description of *Osmunda biternata* with its holotype, to be described later, I wish to emphasize the following salient quotations:

1. *Frond Structure:* "fronde biternata." This phrase could perhaps apply to either species, although it applies more accurately to the plant that Underwood named *B. tenuifolium*. The blade division of the other species is much more nearly tri-or tetraternate. In fact, in his own description of *B. tenuifolium*, Underwood used the term "strictly biternate."

2. *Height of Plant:* "Elle paroît s'élever à-peu-près à la hauteur d'un pied." Underwood's *B. tenuifolium* normally reaches a foot or more in height, especially in coastal plain swamps. Such a stature would be extraordinary in *B. lunarioides*. Michaux's own specimens at Paris and Geneva, plus all that have been collected since, are rarely more than three or four inches tall, including the upright fertile structure. (The tallest known specimens, between 7 and 8 inches, were taken in 1960 in Lee Co., Alabama; these exceptional individuals were in a population of approximately 1,000 plants of the ordinary stature.)

3. *Stalk of the Sterile Blade:* "le pétiole est un peu cylindrique, cannelé, roussâtre, légèrement pubescent, long de quatre à cinque pouces." These characters apply to *B. tenuifolium* — the reddish colors of the blade axes, the slightly pubescent epidermis, and the length of the stalk. In *B. lunarioides*, the axes are always whitish- or yellow-green (no reddish pigmentation except on the fertile structure), the surfaces entirely glabrous, and the blade stalk is nearly sessile (the usual condition) to a rare maximum of an inch in length. (See also 7, below). A specimen of *B. lunarioides* with a stalk four to five inches long would be a monstrosity.

4. *Structure of the Pinnae:* "Ce pétiole se divise à son sommet en trois ramifications qui on environ six lignes, & soutiennent chacune trois folioles pinnatifides, obtuses, à trois ou à cinque lobes." To help us to assess Savigny's use of the term "pinnatifides," a comparison of his other descriptions at the same time shows that he regarded *Botrychium virginianum* as "bipinnata" and *B. cicutaria* and *B. ternatum*

as "supra-decomposita." In extent of segmentation, *B. lunarioides* is like the latter three species, and not like *B. tenuifolium*. Savigny termed the pinnae of *Osmunda claytoniana*, *O. cinnamomea*, and *Matteuccia struthiopteris* as "pinnatifidis." Thus Savigny's concept of the term pinnatifid much more nearly applies to *B. tenuifolium* than to *B. lunarioides*.

5. *Structure of the Pinnules:* "Les folioles latérales sont assez souvent simples, un peu décurrentes, foiblement crénellées sur les bords, & de grandeur inégale, tantôt de six lignes, tantôt d'un pouce de longeur, sur trois à quatre lignes de largeur." A pinnule of *B. lunarioides* 1 inch in length would be remarkable; these are measurements of *B. tenuifolium*. The margins of *B. lunarioides*, especially the large specimens, are coarsely crenate, not serrulate or crenulate as is usual in *B. tenuifolium*.

6. *Venation Pattern:* "Tout ces folioles sont traversées par une nervure longitudinale assez saillante, d'où s'échappent des lignes transversales très fine, qu'on n'apperçoit bien qu'à l'aide de la loupe." The venation of *B. lunarioides* is flabellate, like that of *B. lunaria*, and the veins are conspicuous and more or less remote. Savigny's description calls for a pinnate venation pattern, with a midribbed pinna, and numerous fine veins running out laterally — as in *B. tenuifolium*.

7. The Fertile Segment: "La hampe est insérée à la base du pétiole auquel elle ressemble pour la forme & couleur; elle s'élève d'environ quatre pouces au-dessus de la feuille." The combination of insertion of fertile stalk at the base of a sterile petiole several inches in length, and the extent of the fertile structure several inches above the sterile leaf, describes the situation in *B. tenuifolium*, not *B. lunarioides*.

The totality of the characteristics of *Osmunda biternata* as originally described — the stature, the sterile blade stalk, the relation of the fertile stalk to the sterile, the pinna cutting, the pinnule form, and the venation pattern — agree perfectly with the plant, as we now know it, described by Underwood as *B. tenuifolium*. It is remarkable that authors have overlooked this fact. Also, it would have been surprising indeed had Michaux failed to find the plant which was later named *B. tenuifolium* during his travels in the Carolinas, for it is a very much more abundant species than *B. lunarioides*.

In an attempt to find the holotype of *Osmunda biternata*, I drew a sketch based upon Savigny's description, and sent it to Madame Tardieu-Blot, Sub-Director of the Laboratoire de Phanérogamie, Muséum National d'Histoire Naturelle, Paris. None of Michaux's specimens at Paris which had been cited by Underwood as *B. biternatum* (1898, pp. 529—30) were other than *B. lunarioides*. It was hoped, however, that the type of *Osmunda biternata* might reside at Paris under another name. The results were disappointing: Madame Tardieu-Blot found that none of the specimens in the Michaux Herbarium or in the other herbaria of the National Museum of Natural History at Paris conformed to the plant described by Savigny.

However, Doctors Charles Baehni, Director, and Gilbert Bocquet, Curator of the Boissier Herbarium, at the Conservatoire et Jardin botaniques, Geneva, sought such a specimen in the herbaria there. The results were more fortunate. At first they found a herbarium sheet in the DeCandolle Herbarium under the name "*Botrychium obliquum*," and labeled simply "*Botrypus pteridides* Sw. Carol. Mich." It conformed perfectly to Savigny's description, and thus we were able to confirm what we had expected, namely that Michaux had in fact obtained material that agrees with the later-described *B. tenuifolium* Underw., even though nothing like it is listed in the *Flora boreali-americana*, and there are evidently no similar specimens at Paris.

After finding the above specimen, Dr. Bocquet later conducted a further search

for a specimen with more indication of being the actual holotype, and he succeeded. He wrote (February 17, 1961) as follows: "This time, I hope that I have your specimen for good. As it is often the case, old specimens from the early herbarium are mislaid in our collections. In my first search I went through the quoted species and indeterminata of the genera. In this second, I tried the indeterminata of the family ... and here is the right plant." The specimen, which was sent to me for study, is surely the holotype (Fig. 1). It belongs to the same collection as the other Michaux specimen first located at Geneva, as judged from the form, color, preservation, and so on. Attached to the sheet is a label marked at the top "Osmunda N. Sp. Caroline Michaux." Below is a rough draft of the original description with numerous words crossed out and re-written. The rough description differs in some places from the published one: For example, where the rough draft says "folio triternato, bipinnato" the published has it as "fronde biternata, foliolis pinnatifides." A number of words in the rough description were cut out in the published one. Photographs of the holotype of *Osmunda biternata* are filed in the University of Michigan Herbarium (U. of M. Herb. Neg. nos. 1313—1315; similar photographs of the apparent isotype are no. 1309).

In view of this evidence, namely (1) that Savigny's original description refers to the common southern species we have usually treated as *B. tenuifolium* Underw.; and (2) the fact that specimens which conform entirely to the description actually do exist, including one, the holotype, that is labeled with a rough draft of the published description, the name *Botrychium biternatum* must take priority over *B. tenuifolium.*

As the specific epithet of *Botrychium biternatum* was published prior to the taxa *dissectum* (Spreng., 1804), *obliquum* (Muhl. ex Willd., 1810), and *oneidense* (Gilbert, 1901), the latter, if they should be treated as subspecies or varieties, would have to be combined, of course, under *B. biternatum.* However, the current studies by this author and others indicate more and more clearly that there are really three sympatric species involved among these rather similar-appearing endemic American plants (viz., *B. dissectum* with *obliquum* as one of its forms, *B. oneidense*, and *B. biternatum*). It would thus be unfortunate that any more synonyms be created, unless good evidence in support of their infra-specific status can be adduced to justify any such new combinations.

I wish to acknowledge the help in various ways of R. McVaugh, C. V. Morton, E. G. Voss, Madame Tardieu-Blot, Charles Baehni, and especially Gilbert Bocquet.

References

Fernald, M. L. 1950. Gray's Manual of Botany, 8th ed. American Book Co., New York.

Lamarck, J. B. A. P. M. de, 1797. Encyclopédie méthodique. Botanique, vol. 4. Paris.

Michaux, A. 1803. Flora boreali-Americana ... Paris.

Morton, Conrad V. 1952. Pteridophyta, *in* Gleason, H. A. Illustrated Flora of the N. E. United States and Adjacent Canada. New York.

Underwood, L. H. 1896. The habitats of the rarer ferns of Alabama. Bot. Gaz. 22: 407-412, pl. xxi.

——. 1898. American Ferns — 1: the ternate species of Botrychium. Torrey Club Bull. 25: 521-541.

NOMINA GENERICA CONSERVANDA ET REJICIENDA SPERMATOPHYTORUM X* ABBREVIATIONS OF SERIALS

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The following abbreviations, used in the preceding list of conserved and rejected names and bibliography, conform to the principles followed by Schwarten and Rickett [Bull. Torrey Club **85**: 277-300 (1958); **88**: 1-10 (1961)]. With a few slight exceptions (which do not affect the general method), the abbreviations included in those lists and the present work are identical.

It is sometimes difficult to determine whether a work in more than one volume is or is not a serial. It is usually thought of as such if no definite term is placed upon its issuance. Some works undoubtedly *intended* to be serial expired after only one volume (e.g. Acta Lit. Univ. Hafn.). On the other hand, some works intended to be complete in a certain number of volumes were never completed and continue to appear as if serial (e.g. N. Am. Flora). Another criterion is the inclusion of contributions from several authors; this accounts for the designation of Bot. Misc. Hooker as a serial. But the decision is often arbitrary and based solely on convenience; e.g. Pflanzenreich, Dict. Sci. Nat.

Abh. Akad. Berlin Physik — Abhandlungen der (Königlichen Preussischen) Akademie der Wissenschaften (zu Berlin). Physikalisch(e) (-Mathematische) Klasse.

Abh. Akad. München — Abhandlungen der Mathematisch-physikalischen Classe der Königlich Bayerischen Akademie der Wissenschaften.

Abh. Boehm. Ges. Wiss. — Abhandlungen der Königlich Böhmischen Gesellschaft der Wissenschaften. [Should be cited Abh. Böhm. Ges. Wiss.]

Acad. Theod.-Palat. Acta — Academia Electoralis Scientiarvm et elegantiorvm literarvm Theodoro-palatina. Historia et Commentationes. [Mannheim. Also entitled "Academia Theodoro-palatina. Acta."]

Act. Soc. Hist. Nat. Paris — Actes de la Société d'Histoire Naturelle de Paris.

Acta Acad. Mogunt. Erfurt — Acta Academiae Electoralis Moguntinae Scientiarum quae Erfurti est.

Acta Acad. Petrop. — Acta Academiae Scientiarum Imperialis Petropolitanae.

Acta Helvet. — Acta Helvetica, physico-mathematico-botanico-medica. [Basel.]

Acta Horti Petrop. — Acta Horti Petropolitani.

Acta Lit. Univ. Hafn. — Acta Literaria Universitatis Hafniensis. [Only vol. 1 published.]

Acta Matr. — [not found by us].

Acta Theod.-Palat. — see Acad. Theod.-Palat. Acta.

Adansonia — Adansonia. Recueil périodique d'observations botaniques. [Paris.]

Alg. Konst- Letterb. — Algemeene Konst- en Letterbode. [Haarlem.]

Allg. Gartenz. — Allgemeine Gartenzeitung. [Continued as "Berliner Allgemeine Gartenzeitung."]

Allg. Lit. Zeit. — Allgemeine Literatur-Zeitung. [Halle, Jena.]

Am. Journ. Sci. — American Journal of Science. [Yale Univ.]

Am. Mon. Mag. Crit. Rev. — The American Monthly Magazine and Critical Review. [New York.]

Anais Cons. Ultramar. — Anais do Conselho Ultramarino. [? Lisbon.]

Anal. Ci. Nat. — Anales de Ciencias Naturales. [Vols. 1 & 2 as "Anales de Historia Natural." Madrid.]

Anal. Hist. Nat. — Anales de Historia Natural. [See Anal. Ci. Nat.]

Ann. Bot. Konig & Sims — Annals of Botany. [ed. by Charles Dietrich Eberhard Konig & John Sims; London.]

Ann. Bot. Usteri — Annalen der Botanik. [ed. by Paul Usteri. Zürich, 1791-1793. Continued as "Neue Annalen ..."]

Ann. Gén. Sci. Phys. — Annales Générales des Sciences Physiques; ... [Brussels.]

Ann. Lyc. Nat. Hist. N.Y. — Annals of the Lyceum of Natural History of New York. [Continued as "Annals of the New York Academy of Sciences."]

Continued from Taxon 9(5): 149. 1961.

Ann. Mag. Nat. Hist. — The Annals and Magazine of Natural History, or magazine of zoology, botany, and geology; being a continuation of the 'Magazine of zoology and botany' and Sir W. J. Hooker's 'Botanical Companion.' [Vols. 1-5 as "Annals of Natural History."]

Ann. Mus. Hist. Nat. Paris — Annales du Muséum (National) d'Histoire Naturelle. [Paris.]

Ann. Mus. Lugd.-Bat. — Annales Musei Botanici Lugduno-Batavi.

Ann. Sci. Nat. Bot. ser. 4. — see Ann. Sci. Nat. ser. 4. Bot.

Ann. Sci. Nat. ser. 4. Bot. — Annales des Sciences Naturelles. 4e série. Botanique et biologie végétale. [Paris.]

Ann. Soc. Bot. Lyon — Annales de la Société Botanique de Lyon.

Ann. Wetter. Ges. Naturk. — Annalen der Wetterauischen Gesellschaft für die Gesammte Naturkunde.

Ann. Wiener Mus. — Annalen des Wiener Museums der Naturgeschichte.

Arch. Bot. Guillemin — Archives de Botanique. [ed. by Jean Baptiste Antoine Guillemin.]

Arch. Bot. Roemer — Archiv für die Botanik. [ed. by Johann Jakob Römer; Leipzig.]

Arch. Gewächsk. — Archiv der Gewächskunde [Wien, 1812-1814.] [ed. by Leopold Trattinick.]

Arch. Mus. Hist. Nat. Paris — Archives du Muséum d'Histoire Naturelle. Publiées par les professeurs-administrateurs de cet établissement. [Paris. Continuation of "Nouvelles Annales du Muséum ..."; continued as "Nouvelles Archives ..."]

Asiat. Res. — Asiatick Researches or, Transactions of the Society, instituted in Bengal, for inquiring into the History and Antiquities, the Arts, Sciences, and Literature, of Asia. [Calcutta.]

Atl. Journ. — Atlantic Journal, and friend of knowledge. [Philadelphia. Published and nearly all written by Rafinesque.]

Baileya — Baileya. A quarterly journal of horticultural taxonomy. [Bailey Hortorium, Cornell Univ.]

Beitr. Pflanzenk. Russ. Reich. — Beiträge zur Pflanzenkunde des Russischen Reiches. [St. Petersburg. Kaiserliche Akademie der Wissenschaften. Title also in Russian.]

Bibl. Fr. — Bibliographie de la France. Journal général de l'imprimerie et de la librairie. [Paris.]

Bibl. Genève — Bibliothèque Universelle de Genève. [Continuation of "Bibliothèque Universelle des Sciences, Belles-Lettres et Arts."]

Bonplandia — Bonplandia. Zeitschrift für die gesammte Botanik. Officielles Organ der K. L.-C. Akademie der Naturforscher.

Bot. Exch. Club Rep. — The Botanical Exchange Club and Society of the British Isles. Report.

Bot. Jahrb. — Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie. [Leipzig.]

Bot. Mag. — Curtis's Botanical Magazine containing coloured figures with descriptions and observations on the botany history and culture of choice plants. [The Royal Horticultural Society.] [Until very recently, plates were numbered consecutively through the entire series; for these it is unnecessary to cite volumes, but to do so facilitates reference.]

Bot. Mag. Tokyo — The Botanical Magazine, Tokyo. [The Botanical Society of Japan, formerly The Tokyo Botanical Society.]

Bot. Misc. — see Bot. Misc. Hooker.

Bot. Misc. Hooker — Botanical Miscellany; containing figures and descriptions ... with occasional botanical notices and information. By William Jackson Hooker. [London. Continued as Journ. Bot. Hooker.] [Cited as Bot. Misc. See Marshall, Kew Bull. **1936**: 85-94 (1936); Stearn in Stearn & van Steenis-Krüseman, Fl. Males. **4**(5): CLXXXVIII (1954).]

Bot. Reg. — Edwards's Botanical Register: or ornamental flowergarden and shrubbery: ... Continued by John Lindley, ... [London. Vols. 1-14 as "The Botanical Register ... The designs by Sydenham Edwards, ..."]

Bot. Repos. — Botanist's Repository for new and rare plants. [London. By Henry C. Andrews. Appeared monthly, 3 plates to an issue. See Journ. Bot. **54**: 236-246 (1916). A note by Cullum in the British Museum (Natural History) copy gives the following schedule: nos. 1-78, 366 plates. No. 79, Mai 1804. No. 89, 1805. Next issue is in Jan 1807. No. 133, 1 Oct 1811. Nos 134-137, ? Mai 1814. There is also a copy of a printed notice from the Cullum Library in

Bury St. Edmunds, dated Mai 1811, in which Andrews mentions his withdrawal of all his publications from booksellers, incl. 132 issues of Bot. Repos.] [No. 33 rev. in Arch. Bot. Roemer **2**(3): 467. 1801.]

Bot. Zeit. — Botanische Zeitung. [Leipzig. Numbers refer to columns, not pages.]

Botaniker — Der Botaniker. [Serial not seen by us. See Arch. Bot. Roemer **1**(1): 127 (1796).]

Bull. Acad. Bruxelles — Bulletins de l'Académie Royale des Sciences et Belles-Lettres de Bruxelles. [Continued as "Bulletins de l'Académie Royale ... de Belgique."]

Bull. Jard. Bot. Buitenzorg — Bulletin du Jardin Botanique de Buitenzorg. [Preceded by "'s Lands Plantentuin. Bulletin de l'Institut Botanique de Buitenzorg" (1898-1905). Ser. 1: "Bulletin du Département de l'Agriculture aux Indes Néerlandaises" (1906-1910). Ser. 2: "Bulletin du Jardin Botanique de Buitenzorg. Deuxième Série" (1911-1918). Ser. 3: "'s Lands Plantentuin (Jardin Botanique de Buitenzorg). Bulletin du Jardin Botanique. Troisième Série, ..." (1918-1950). Vol. 17 (1941-1948) and vol. 18 (1949-1950) were titled: "'s Lands Plantentuin (Botanic Gardens, Buitenzorg, Java) Bulletin of the Botanic Gardens, Buitenzorg. Being a continuation of the Bulletin du Jardin Botanique de Buitenzorg." Superseded by **Reinwardtia**.]

Bull. Soc. Bot. France — Bulletin de la Société Botanique de France.

Bull. Soc. Linn. Paris — Bulletin Mensuel de la Société Linnéenne de Paris.

Bull. Soc. Nat. Moscou — Bulletin de la Société (Impériale) des Naturalistes de Moscou. [Continued as "Section biologique. Nouvelle série." with title also in Russian: "Biulleten Moskovkovo Obshchestva Ispitatelei Prirodi. Otdel Biologicheskii. Novaia seria."]

Bull. Soc. Philom. Paris — Bulletin des Sciences, par la Société Philomathique de Paris.

Bull. Torrey Club — Bulletin of the Torrey Botanical Club.

Cact. Journ. — Cactus Journal. [Great Britain.]

Cact. Succ. Soc. Journ. — Cactus & Succulent Society Journal.

Calcutta Journ. Nat. Hist. — Calcutta Journal of Natural History and miscellany of the arts and sciences in India. [1840-1847.]

Calif. Farmer — The California Farmer and Journal of Useful Sciences, ... [San Francisco. Each vol. consists of 26 weekly issues; vol. 2 contains also two 4-page extras. The second of these, dated 26 Aug 1854, contains material from no. 8; Winslow's article appears on p. 4.]

Castanea — Castanea. The journal of the Southern Appalachian Botanical Club.

Ceiba — Ceiba, a scientific journal issued by the Escuela Agrícola Panamericana. [Tegucigalpa.]

Chron. Bot. — Chronica Botanica, an international collection of studies in ... [Waltham.]

Comm. Soc. Reg. Sci. Gott. — Commentarii Societatis Regiae Scientiarum Gottingensis. [1751-1754. Superseded by "Commentationes ...," 1758-1768, 1778-1808. (Between these two series came "Novi Commentarii ...," 1769-1777.) Superseded by "Commentationes ... Recentiores," 1808-1837. These may be styled: ser. 1 (1751-1754); ser. 2 (1758-1768); ser. 3 (1778-1808). The citation for 7414 should read "ser. 3." That for 465 should read **Comm. Soc. Reg. Sci. Gott. Recent.**]

Comp. Bot. Mag. — Companion to the Botanical Magazine; ... By W. J. Hooker, ... [See Kew Bull. **1933**: 362-364. United with Mag. Zool. Bot. to form Ann. Nat. Hist.]

Contr. Gray Herb. — Contributions of the Gray Herbarium of Harvard University.

Contr. U.S. Nat. Herb. — Contributions from the United States National Herbarium. [United States National Museum, Smithsonian Institution. Preferable abbreviation is "Contr. U.S. Natl. Herb."]

Denkschr. Akad. München — Denkschriften der Königlichen Akademie der Wissenschaften zu München.

Dict. Class. Hist. Nat. — Dictionnaire Classique d'Histoire Naturelle.

Dict. Sci. Nat. — Dictionnaire des Sciences Naturelles ... par plusieurs professeurs du Jardin du Roi, et des principales écoles de Paris.

Edinb. New Philos. Journ. — Edinburgh New Philosophical Journal. [Superseded Edinb. Philos. Journ.]

Edinb. Philos. Journ. — Edinburgh Philosophical Journal. [Superseded by Edinb. New Philos. Journ.]

Ess. Philos. Soc. Edinb. — Essays and Observations, physical and literary. [Philosophical Society of Edinburgh.]

Flora — Flora oder (Allgemeine) Botanische Zeitung. [Jena.] [Some volumes contain "Beilage" or "Beiblätter". These may be paged continuously for the volume, or each part may be paged separately. In addition; volumes were issued in two parts, independently paged. In vol. 7(1), for instance, the "Beilage" were paged continuously; it is unnecessary to cite each individual Beilage. The same is true of the "Beiblätter" of vol. 25(2). In some volumes the "Beiblätter" are announced in the dated parts to which they belong. In vol. 20(2) ("xx. Jahrgang. II. Band") the Beiblätter were not numbered but undoubtedly in 16-page signatures, p. 114 is in Beibl. 8, dated (p. 624) 21 Oct 1837.]

Fl. Males. — Flora Malesiana, being an account of the Malaysian flora. [Flora Malesiana Foundation, Leyden.]

Fl. Males. Bull. — Flora Malesiana Bulletin. [Flora Malesiana Foundation, Leyden.]

Gard. Chron. ser. 3. — The Gardeners' Chronicle. A weekly illustrated journal of horticulture and allied subjects. Third series. [London.]

Garden Forest — Garden and Forest. A journal of horticulture, landscape art and forestry. [New York.]

Gartenflora — Gartenflora. [Deutsche Gartenbau-Gesellschaft.]

Gent. Herb. — Gentes Herbarum. Occasional papers on the kinds of plants. [The Bailey Hortorium, Cornell Univ.]

Gent. Mag. — Gentleman's Magazine: and historical chronicle. [London. Subtitle varied.]

Ges. Naturf. Freunde Berlin Mag. — Der Gesellschaft Naturforschender Freunde zu Berlin Magazin für die neusten Entdeckungen in der gesammten Naturkunde. [Under 1111 & 5990 as Mag. Ges. Naturf. Fr. Berlin.]

Ges. Naturf. Freunde Berlin Neue Schr. — Der Gesellschaft Naturforschender Freunde zu Berlin Neue Schriften.
[Willdenow in 1805 referred (8724) *Stylidium* to "Swartz, Nov. Act. Nat. Scrut. 5 ..." Some thought revealed this to be the above serial, of which vol. 4 was issued in 1803 and vol. 5 never. The "Magazin" of the society was begun in 1807 and carries Swartz' article, evidently seen by Willdenow in proof or in manuscript. This is followed by an article by Willdenow explaining the delay in publication and calling attention to *Candollea* and *Ventenatia*, later synonyms of *Stylidium* if it had been published in 1804, but now antedating it. Curiously, Willdenow does not mention his own publication of 1805.]

Gött. Gelehrte Anz. — Göttingische Gelehrte Anzeigen. [Under 468b as Gött. Gel. Anz.]

Hedwigia — Hedwigia. Organ für Kryptogamenkunde und Phytopathologie nebst Repertorium für kryptogamische Literatur. Dresden. Subtitle varied.]

Hist. Acad. Roy. Sci. Paris Mém. — Histoire de l'Académie Royale des Sciences. Année M. DCCXLIX. Avec les mémoires de mathématique & physique, pour la même année. Tirés des registres de cette académie. [Paris.]

Hooker's Ic. Pl. — Hooker's Icones Plantarum or figures with descriptive characters and remarks of new and rare plants selected from the Kew Herbarium.

Hortic. Univ. — L'Horticulteur Universel. [Paris.]

Journ. Acad. Nat. Sci. Phila. — Journal of the Academy of Natural Sciences of Philadelphia. [Under 1006 as Journ. Acad. Nat. Sci. Phil.; under 7022 as Journ. Acad. Phila.]

Journ. Acad. Phila. — see Journ. Acad. Nat. Sci. Phila.

Journ. Arnold Arb. — Journal of the Arnold Arboretum, Harvard University.

Journ. Bot. — The Journal of Botany, British and foreign. [London. Preferably distinguished as Journ. Bot. London.]

Journ. Bot. Desvaux — Journal de Botanique, appliqué à ... Rédigé par N. A. Desvaux. [Paris. Earlier volumes were titled "Journal de Botanique, rédigé par une société de botanistes." In two series. Volumes 1 & 2 (parts 1-4) compose the first series: dated 1808, 1809. Vol. 1 of ser. 2 has on the t.-p. "Seconde année. Tome 3e"; it appeared in 1813 (signatures are dated to the month). The succeeding vols. 2-4 of ser. 2. are dated 1813, 1814, 1814. Bibl. Fr. 3: 251 (10 Sep 1814): "Il a

paru en 1810 deux vol. de ce journal; le troisième est de 1813." See also Journ. Arnold Arb. **28**: 247. Vol. 3 No. 5 in Feb 1816 or later: Bull. Torrey Club **56**: 531. Bibl. Fr. **3**: 251 (10 Sep 1814): Vol. 4, p. 1-48, 2 *t.*]

Journ. Bot. Hooker — The Journal of Botany, being a second series of the Botanical Miscellany; ... by William Jackson Hooker. [Succeeded by London Journ. Bot.]

Journ. Bot. Kew Misc. — Hooker's Journal of Botany and Kew Garden Miscellany. Edited by Sir William Jackson Hooker. [Continuation of London Journ. Bot.]

Journ. Bot. Schrader — Journal für die Botanik. Herausgegeben von Medicinalrath Schrader. [Göttingen. Superseded by Neues Journ. Bot. Schrader. The vols. and parts of both series are considerably confused in numbering. It is necessary to use the *year* for the volumenumber.]

Journ. Gén. Lit. Étr. — Journal Général de la Littérature Étrangère. [After 1830 continued in Journ. Gén. Lit. Fr.]

Journ. Gén. Lit. Fr. — Journal Général de la Littérature de France. [Paris.]

Journ. Hist. Nat. Paris — Journal d'Histoire Naturelle; rédigé par MM. Lamarck, Brugière, ... [Paris. Two volumes only, 1792.]

Journ. Linn. Soc. Bot. — The Journal of the Linnean Society of London. Botany. [Vols. 1-8 as "Journal of the Proceedings of the Linnean Society. Botany."]

Journ. Phys. Chim. Hist. Nat. Arts — Journal de Physique, de Chimie, d'Histoire Naturelle et des Arts. [Continuation of Obs. Phys. Hist. Nat. Arts. Paris.]

Journ. Roy. Asiat. Soc. Bengal — Journal of the (Royal) Asiatic Society of Bengal, Calcutta.

Journ. Roy. Asiat. Soc. Bombay — Journal of the (Royal) Asiatic Society, Bombay Branch.

Journ. Soc. Bibliogr. Nat. Hist. — The Journal of the Society for the Bibliography of Natural History.

Kew Bull. — [Royal Botanic Gardens, Kew.] Kew Bulletin. [Formerly "Bulletin of Miscellaneous Information."]

Lärda Tidn. — Lärda Tidningar. [Stockholm, 1745-1773.]

Linnaea — Linnaea. Ein Journal für die Botanik ... oder, Beiträge zur Pflanzenkunde. [Berlin, Halle (5977) **9**: 607. See p. 566 for date.]

Linneska Samfund. Handl. — Linnéska Samfundets Handlingar. [Stockholm. Only one vol. published, 1833.]

Lond. Edinb. Dubl. Philos. Mag. — London, Edinburgh and Dublin Philosophic Magazine and Journal of Science. [London. Title varied. Under 4542 as "London Edinb. Dublin Philos. Mag."]

London Journ. Bot. — The London Journal of Botany; ... by Sir W. J. Hooker. [Successor to Journ. Bot. Hooker; succeeded by Journ. Bot. Kew Misc.]

Lunds Univ. Årsskr. — Lunds Universitets Årsskrift.

Mag. Bot. Römer et Usteri — Magazin für die Botanik herausgegeben von Joh. Jacob Römer und Paulus Usteri. [Zürich. First title: "Botanisches Magazin." Superseded by "Neues Magazin für die Botanik."]

Mag. Ges. Naturf. Fr. Berlin — See Ges. Naturf. Freunde Berlin Mag.

Mag. Zool. Bot. — Magazine of Zoology and Botany. [Edinburgh & London. United Comp. Bot. Mag. to form Ann. Nat. Hist., which became Ann. Mag. Nat. Hist.]

Med. Repos. N.Y. — The Medical Repository of New York. [Series 2 as "The Medical Repository. Second hexade."]

Meded. Bot. Mus. Utrecht — Mededeelingen van het Botanisch Museum en Herbarium van de Rijksuniversiteit te Utrecht.

Mém. Acad. St.-Pétersb. Sav. Étr. — Mémoires présenté à l'Académie Impériale des Sciences de St.-Pétersbourg par divers savans. [At bottom of first page of each signature appears "Mémoires des savants étrangers."]

Mém. Acad. Sci. Berlin — Mémoires de l'Académie Royale des Sciences et Belles-Lettres depuis l'avènement de Fréderic Guillaume II au trône, avec l'histoire pour le même temps. [Berlin. Under 3868 as Mém. Acad. Berlin.]

Mém. Acad. Sci. Lettr. Montpellier Sci. — Académie des sciences et lettres de Montpellier. Mémoires de la section des sciences. [In 2 series, 1851-1892, 1896-1911.]

Mém. Acad. Sci. Paris — Mémoires de l'Académie (Royale) des Sciences. [Paris. Succeeded by "Mémoires de l'Institut National des Sciences et Arts. Sciences Mathématiques et physiques." Titles vary.]

Mem. Acad. Soc. Med. Sevilla — [This serial was not found by us.]

Mém. Acad. Toulouse — Mémoires de l'Académie des Sciences, Inscriptions et Belles-lettres de Toulouse.

Mem. Accad. Sci. Torino — Reale Accademia delle Scienze di Torino Mémoires de l'Académie Royale des Sciences [Turin, 1784-1801]; Mémoires de l'Académie des Sciences, Littérature et Beaux-arts de Turin [1802-1813]; Mémoires de l'Académie Royale ... [1816]; Memorie della R. Accademia delle Scienze di Torino [1818-].

Mem. Am. Acad. — Memoirs of the American Academy of Arts and Sciences. [Boston.]

Mém. Cour. Sav. Étr. Acad. Roy. Belg. — [Académie Royale des Sciences, des Lettres et des Beaux-arts de Belgique.] Mémoires Couronnés et Mémoires des Savants Étrangers. [Vols. 1-5 as "Mémoires sur les questions ... qui ont remportés les Prix; ..."]

Mém. Mus. Hist. Nat. Paris — Mémoires du Muséum d'Histoire Naturelle. [Paris.]

Mém. Soc. Hist. Nat. Paris — Mémoires de la Société d'Histoire Naturelle de Paris.

Mem. Soc. Ital. Sci. — Memorie (di matematica e di fisica) della Società Italiana delle Scienze. [Roma.]

Mém. Soc. Nat. Moscou — Mémoires de la Société Impériale des Naturalistes de Moscou. [Vol. 1 was entitled "Mémoires de la Société des Naturalistes de l'Université Impériale de Moscou."]

Mém. Soc. Phys. Hist. Nat. Genève — Mémoires de la Société de Physique et d'Histoire Naturelle de Genève.

Mem. Wern. Soc. — Memoirs of the Wernerian Natural History Society. [Edinburgh.]

Mercurio Chil. — El Mercurio Chileno. [Santiago.] [16 issues are bound in one volume; the first (no. 1) begins with a "Prospectus." According to the *Union List of Serials,* no more was published.]

Mitt. Bot. Mus. Zürich — Mitteilungen aus dem Botanischen Museum der Universität Zürich.

Mon. Lit. Adv. — (Bent's) Monthly Literary Advertiser (, Register of Books, Engravings, &c.). [London.]

Mon. Rev. London — Monthly Review (; or, literary Journal). [London. Title and subtitle varied.]

N. Am. Fl. — North American Flora. [The New York Botanical Garden.]

Nat. Geneesk. Arch. Neerl. Ind. — Natuur- en Geneeskundig Archief voor Neêrland's-Indië. [Batavia.]

Natl. Cact. Succ. Journ. — The National Cactus and Succulent Journal. [Bradford.]

Naturk. Tijdschr. Ned. Indië — Naturkundig Tijdschrift voor Nederlandsch Indië. [Koninklijke Naturkundige Vereeniging in Nederlandsch Indië. Continued as "Natuurwetenschappelijk Tijdschrift voor Nederlandsch Indië." and later as "Chronica Naturae."]

Nederl. Kruidk. Arch. — Nederlandsche Kruidkundig Archief. Verslagen en Mededelingen der Koninklijke Nederlandsche Botanische Vereeniging. [Superseded by "Acta Botanica Neerlandica."]

Neue Schr. Naturf. Ges. Halle — Neue Schriften der Naturforschenden Gesellschaft zu Halle.

Neues Journ. Bot. Schrad. — Neues Journal für die Botanik. Herausgegeben vom Professor Schrader. [Erfurt. Superseded Journ. Bot. Schrader.]

Norske Vid. Selsk. Skr. — Det Kongelige Norske Videnskabers Selskaps Skrifter. [As Norske Vid. Skr.]

Norske Vid. Skr. — see Norske Vid. Selsk. Skr.

Not. Syst. Paris — [Muséum National d'Histoire Naturelle.] Notulae Systematicae. [Paris.]

Notes Bot. Gard. Edinb. — Notes from the Royal Botanic Garden. [Edinburgh.]

Notizbl. Bot. Gart. Berlin — Notizblatt des Botanischen Gartens und Museums zu Berlin-Dahlem. [Continued as Mitteilungen aus ...]

Nouv. Ann. Mus. Paris — Nouvelles Annales du Muséum d'Histoire Naturelle. [Paris. Continued as Arch. Mus. Hist. Nat. Paris.]

Nouv. Bull. Soc. Philom. Paris — Nouveau Bulletin des Sciences, par la Société Philomathique de Paris.

Nova Acta Acad. Leop.-Carol. — Nova Acta (Leopoldina) Academiae Caesareae Leopoldino-Carolinae Naturae Curiosorum. [Title also in German, in some years only in German. The name of the academy varied; until 1922 as "Leopoldinisch-Carolinische Deutsche Akademie der Naturforscher." Breslau, Bonn.]

Nova Acta Soc. Sci. Upsal. — Nova Acta Regiae Societatis Scientiarum Upsaliensis.

Nye Saml. Vid. Selsk. Skr. — Nye Samling af det Kongelige Norske Videnskabers Skrifter. [Trondhjem, 1784-1788. From 1761-1877 and 1879- the society published its "Skrifter." From 1761-1765 the society's name was "Det Trondhjemske Selskab."]

Obs. Phys. Hist. Nat. Arts Paris — Observations sur la Physique, sur l'Histoire Naturelle et sur les Arts, ... [Paris, 1773-1794. Continued as Journ. Phys. Chim. Hist. Nat. Arts Paris.]

Oesterr. Bot. Wochenbl. — Oesterreichische Botanische Wochenblatt. [See Oesterr. Bot. Zeitschr.]

Oesterr. Bot. Zeitschr. — Österreichische Botanische Zeitschrift. [Wien. Vols. 1-7 were entitled "Oesterreichische Botanische Wochenblatt."]

Orchis — Orchis. Mitteilungen des Orchideenausschusses des Vereins zur Beförderung des Gartenbaues. Beilage zur "Gartenflora." [Berlin. Subtitle varies. Not to be confused with an earlier "Orchis" (1906, 1907), "Monatsschrift der Deutschen Gesellschaft für Orchideenkunde."]

Pacif. Sci. — Pacific Science; a quarterly devoted to the biological and physical sciences of the Pacific region. [University of Hawaii.]

Pflanzenreich — Das Pflanzenreich; regni vegetabilis conspectus. [Leipzig.]

Philipp. Journ. Sci. — The Philippine Journal of Science. [Institute of Science and Technology, Manila.]

Philos. Trans. Roy. Soc. — Philosophical Transactions of the Royal Society of London.

Phys. Saellsk. Handl. — Physiografiska Sällskapets Handlingar. [Lund. Vol. 1 in 4 parts, 1776-1786.]

Pollichia — Mitteilungen der Pollichia eines naturwissenschaftlichen Vereins der Rheinpfalz. [Also named "Pfälzischer Verein für Naturkunde und Naturschutz 'Pollichia.'" Title varied. Cited as "Pollichia," but should preferably be cited as "Mitt. Pollichia."]

Proc. AAAS — Proceedings of the American Association for the Advancement of Science. [Continued as "American Association for the Advancement of Science. Summarized Proceedings."]

Proc. Am. Acad. — Proceedings of the American Academy of Arts and Sciences. [Boston.]

Proc. Am. Philos. Soc. — Proceedings of the American Philosophical Society held at Philadelphia for promoting useful knowledge.

Proc. Biol. Soc. Wash. — Proceedings of the Biological Society of Washington [D.C.].

Proc. Roy. Soc. Edinb. — Proceedings of the Royal Society of Edinburgh.

Proc. Verb. Mens. Soc. Dauph. Ethn. Arch. — Procès-Verbaux Mensuels de la Société Dauphinoise d'Ethnologie et d'Archéologie. [Grenoble.]

Quart. Journ. Sci. Lit. Arts — Quarterly Journal of (Science, Literature,) and (the) Art(s). [Royal Institution of Great Britain.]

Rep. Bot. Exch. Club, see Bot. Exch. Club Rep.

Repert. Sp. Nov. — Feddes Repertorium Specierum Novarum Regni Vegetabilis. [Berlin. Vols. 1-7 as "Repertorium Novarum Specierum Regni Vegetabilis."]

Rev. Hort. — Revue Horticole. [Paris.]

Revista Braz. — Revista Brazileira; jornal de sciencias, lettras e artes. [Rio de Janeiro.]

Revista Univ. Chile — Revista Universitaria; publicación de la Universidad Católica de Chile. [Title varies.]

Rhodora — Rhodora. Journal of the New England Botanical Club.

Rodriguésia — [Ministério da Agricultura.] Rodriguésia. Revista do Jardim Botânico. [Rio de Janeiro.]

Samml. Phys.-oek. Aufs. — Sammlung physikalisch-ökonomischer Aufsätze, zur Aufnahme des Naturkunde und deren damit verwandten Wissenschaften in Böhmen; herausgegeben von Franz Wilibald Schmidt. [Only one vol. published, 1795. Title from Pritzel.]

Schr. Berlin. Ges. Naturf. Freunde — Schrifter der Berlinischen Gesellschaft Naturforschender Freunde.

Skr. Naturh. Selsk. Kjøbenh. — Skrivter af Naturhistorie-Selskabet. [Kjøbenhavn.]

Smithson. Contr. Knowl. — Smithsonian Contributions to Knowledge. [Smithsonian Institution, Washington.]

Syll. Pl. — Sylloge Plantarum Novarum itemque Minus Cognitarum. [Regensburg. 1824-1828.]

Symb. Antill. — Symbolae Antillanae, seu fundamenta florae Indiae occidentalis. [Leipzig. Largely by Urban.]

Taxon — Taxon. Official news bulletin of the International Association for Plant Taxonomy. [Utrecht.]

Tijdschr. Nat. Gesch. — Tijdschrift voor Natuurlijke Geschiedenis en Physiologie. [Amsterdam; Leyden. 1834-1845.]

Torreya — Torreya. A (monthly) (quarterly) journal of botanical notes and news. [New York. Incorporated with Bull. Torrey Club.]

Trans. Acad. Sci. St. Louis — Transactions of the Academy of Science of St. Louis. [For date of vol. 1, no. 3, see p. 669.]

Trans. Am. Philos. Soc. — Transactions of the American Philosophical Society held at Philadelphia for promoting useful knowledge.

Trans. Hort. Soc. London — Transactions of the Horticultural Society of London.

Trans. Linn. Soc. — The Transactions of the Linnean Society of London.

U.S. Dep. Agr. Bur. Pl. Ind. Bull. — United States Department of Agriculture. Bureau of Plant Industry-Bulletin.

Univ. Wyoming Publ. Bot. — University of Wyoming Publications. [Continuation of "University of Wyoming Publications in Science. Botany."]

Verh. Batav. Genootsch. — Verhandelingen van het (Koninklijk) Bataviaasch Genootschap van Kunsten en Wetenschappen.

Verh. Nat. Geschied. Nederl. Overz. Bezitt. — Verhandelingen over de Natuurlijke Geschiedenis der Nederlandsche Overzeesche Bezittingen. [Leiden, 1839-1844.]

Vet.-akad. Handl. Stockholm — (Kongl.) Vetenskaps-akademiens Handlingar. [In two series, between which (1780-1812) came the "Nya Handlingar." Cited as Vet.-akad. Handl. Stockholm.]

Vet.-akad. Stockholm Nya Handl. — Kongl. Vetenskaps Academiens Nya Handlingar. [See under Vet.-akad. Handl. Stockholm.]

Vid. Medd. Nat. For. Kjøbenh. — Videnskabelige Meddelelser fra (den) (Dansk) Naturhistorisk Forening i Kjøbenhavn.

Vigne Am. — La Vigne Américaine et la Viticulture en Europe. [Lapeyrouse-Mornay, Drôme.]

Vorl. Churpf. Phys.-ökon. Ges. — Vorlesungen der churpfälzischen physikalisch-ökonomischen Gesesllschaft. [Heidelberg.]

Wien. Zeitschr. Kunst Litt. Theater Mode — Wiener Zeitschrift für Kunst, Litteratur, Theater, und Mode.

INDEX

The entries in this index must be read as follows:

Abelicea 1901 (x, †, W) 8: 261
generic name in *italics: nomen rejiciendum* or name mentioned in a *note* (denoted by x) generic name in roman type (e.g. Acanthonema): **nomen conservandum.**

1901: Dalla Torre et Harms number
x: mentioned in note
†: case of superfluous conservation
W: indicates Congress at which the respective case of conservation was accepted (see below)
8: volume number of Taxon
261: page number.

The information re *Abelicea* therefore reads as follows: inserted in the list of nomina conservanda under Dalla Torre et Harms number 1901, mentioned in the note, a case of superfluous conservation, inserted in the Code by the Vienna Congress of 1905, and to be found in the revision in Taxon volume 8 on page 261.

W = names from 1905, Rules ed. 1 (**W**ien)

B = names from 1910, Rules ed. 2 (**B**russel)

A = names from 1930-1935, partly handled by the Cambridge 1930 Committee, but all of them again treated with the new proposals by the **A**msterdam Committee. Results published in Kew Bull. 1940 no. 3. (Alph. list: Chron. Bot. **12**: 81. 1950).

P = names from 1940-1950, handled by the Stockholm Committee (1950-54), and accepted by the **P**aris Congress. Results published in Taxon **3**: 112, 240. 1954.

Notes *1* the Rules ed. 3 (Cambridge 1930, publ. 1935) contain no new names except those in the lists of proposals.

2 the Stockholm Code (1950, publ. 1952) contains no new names, but in this list, as in the Brittonia list, the A-names appear for the first time in their proper places.

Abelicea 1901 (x, †, W) 8: 261
Aberemoa 2680 (W) 8: 272
Abumon 1046 (W) 8: 236
Acanthonema 7835 (A) 9: 114
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NEWS AND NOTES

M. ROBERT WILMANN

Depuis le mois de juin 1961, M. Robert Wilmann qui était chargé de l'Herbier du Service de Phanérogamie du Muséum National d'Histoire Naturelle (Paris) a pris sa retraite.

Après avoir été élève de l'Ecole de Viticulture de Beaune (Côte d'Or) de 1909 à 1912, il entra, à l'âge de 16 ans, au Muséum National d'Histoire Naturelle, le 10 Juin 1912, comme Jardinier au Service de Culture.

Mobilisé en 1915, il fut blessé, puis démobilisé en 1919: il revint alors au Muséum.

En août 1942, il fut nommé, en remplacement de M. Metmann, au Laboratoire de Phanérogamie comme agent-technique. Dès lors, il consacra tout son temps à l'entretien des herbiers, aux préparations et à l'envoi du matériel aux Botanistes étrangers, au rangement des collections ...

Beaucoup de Botanistes étrangers et français avaient recours à lui pour des recherches dans les herbiers, retrouver les échantillons-types, identifier les écritures des anciens botanistes, relever les indications portées sur les étiquettes, etc.

Il accomplissait tous ces travaux avec une grande amabilité, un sourire très affable et une inlassable complaisance. Dévoué au Muséum durant 49 ans, il a rendu de grands services à la Botanique: tous ceux qui l'ont connu lui témoignent une profonde reconnaissance.

P. Jovet et A. Lourteig

THE Xth INTERNATIONAL BOTANICAL CONGRESS

At a meeting of the IXth International Botanical Congress in Montreal in 1959 it was suggested that the Xth Congress might be held in the United Kingdom in 1964. On the recommendation of the British National Committee for Biology, and following discussions with the authorities of the City, the University and the Royal Society of Edinburgh, the Royal Society of London on behalf of all host organisations then issued a formal invitation suggesting that the Xth International Botanical Congress should be held in Edinburgh from Monday, August 3 to Wednesday, August 12 1964.

This invitation having been accepted by the Division of Botany of the International Union of Biological Sciences, the Royal Society invited representatives from Universities, Research Institutes and Biological Societies to a meeting in the Senate Hall of the Old College Edinburgh on Wednesday, March 22 1961. The Lord Provost of Edinburgh, the Principal and Vice-Chancellor of the University, and City Chamberlain were also invited to the meeting and with other representatives agreed to form the Congress Committee. This committee unanimously elected Professor H. Godwin, F.R.S., of the University of Cambridge, President of the Congress. Joint Secretaries of the Executive Committee will be Professor G. E. Fogg, Department of Botany, Westfield College, Hampstead, London, N.W. 3, and Dr. A. J. Brook, Department of Botany, University of Edinburgh, at Royal Botanic Garden, Edinburgh, 3.

FIFTH ARGENTINE BOTANICAL MEETING

Organized by the Sociedad Argentina de Botánica, under the auspices and with the financial support of the Executive National Commission of the Sesquicentennial of the May Revolution, the Fifth Argentine Botanical Meeting took place in the city of Tucumán from the 27th of November to the 4th of December 1960.

Honorary President of the Meeting was Professor Lorenzo R. Parodi, dean of the Argentine botanists. The organizing Committee were the following officers of the Argentine Botanical Society, presided over by Angel L. Cabrera: Humberto A. Fabris, Maevia N. Correa, Osvaldo Boelcke, Arturo Burkart, Clotilde Jauch, Carlos Petetin, Elisa Nicora, Elsa Lacoste, and Cloofe Calderon. The local organizing Committee consisted of Antonio P. L. Digilio, Teodoro Meyer, and Antonio Krapovickas. Other members of the organizing Committee were the following representatives: Oscar Kuhnemann (Buenos Aires University), Armando Hunziker (Cordoba University), Enrique M. Sivori (La Plata University), Guillermo Covas (La Pampa University), and Adrian Ruiz Leal (Cuyo University).

The many foreign botanists who attended the meetings, either as guests of honour or on their own initiative, enhanced the quality of the Meeting. Among others: Dr. W. C. Steere, director of the New York Botanical Garden; Dr. Stanley A. Cain, of the University of Michigan; Dr. I. Mackenzie Lamb of Harvard University; Dr. Alicia Lourteig of the Natural History Museum of Paris; Dr. Tobías Lasser of the Botanical Service of Venezuela; Dr. Dárdano de Andrade Lima of Recife (Brasil); Dr. Margarete Emmerich of the National Museum of Rio de Janeiro; Mr. Roberto M. Klein of the Instituto Barbosa Rodrigues at Itajai (Brasil); Dr. Alarich R. Schultz, Eny Correa Vianna and Maria Henriquetta Homrich of the University of Porto Alegre; Blanca R. Arrillaga de Maffei, Primavera Izaguirre de Artucio, Isabel Zirpoli de Filgueiras and Miss. Amali M. Laguardia of the University of Montevideo. Dr. Ismael Velz of the University of Puerto Rico; Dr. Arnaldo Lopez Miranda of the University of Trujillo (Peru); Dr. Cesar Vargas C. of the University of Cusco; Dr. Ramon Ferreyra of the University of Lima; Dr. Martin Cárdenas of the University of Cochabamba; Ing. Carlos Muñoz Pizarro and Miss Eugenia Navas of the University of Santiago; Dr. Mario Ricardi of the University of Concepción, and others.

All the Argentine scientific Institutions sent delegates to this Meeting, but space is not available to list all the representatives. The total of participants was more than 150.

The inaugural session took place in the Instituto Lillo. Dr. Abraham Willink, Director of this Institution spoke, and so also did Dr. Angel Cabrera, President of the Argentine Botanical Society. Professor Lorenzo R. Parodi lectured on "150 years of Botany in the Argentine Republic". A palm of flowers was deposited on Miguel Lillo's grave and the historical Casa de Tucumán was visited and honored. The sessions took place over a period of four days and more than sixty papers on different branches of Botany were presented. It is to be noted that evident progress has been made in the Botanical Sciences of our country, especially as regards methods of study, techniques, etc. Remarkable, too, were the papers on Agrostology, the number and quality of which would have justified a special section on the program.

In addition, several lectures were given; the most interesting were Dr. Stanley A. Cain's on the "Application of ecological principles to human ecology"; Dr. Alicia Lourteig's on "History of the Museum of Natural History of Paris" and that of Prof. Ing. Arturo Burkart on "International Botanical Congresses". Several films and slides on phytogeographical subjects were also shown.

All these activities took place in Horco Molle in the building that the University of Tucumán constructed for the School of Nurses and that is, at present, reserved for Congresses. Most of the participants to the Meeting lived in the same building which greatly favored their getting acquainted and the discussion and interchange of ideas.

The closing Session took place again in the Instituto Lillo on Wednesday the 30th; Dr. Martín Cárdenas, Ing. Arturo Ragonese and Dr. Teodoro Meyer spoke on that occasion. At this meeting, Prof. Parodi was acclaimed Honorary President of the Meeting for his outstanding work in Botany and in teaching.

A field trip to the Northeastern part of Argentina was made from Tucumán, through Tafi del Valle, Cafayate, Salta, and back to Tucumán. As there were over a hundred participants it was necessary to divide the excursion in two groups that made the trip in opposite directions. Due to the great number of delegates and of the papers presented, to their excellent quality, and to the great number of foreign botanists, the 5th Argentine Botanical Meeting was a great success, of high scientific level, and could almost be considered a Pan-American Congress of the scientia amabilis.

COLOCYNTHIS AND CITRULLUS

It is a pity that Meeuse (Taxon 10: 29) should have seen fit to revive the old controversy of *Citrullus* versus *Colocynthis* which, it was hoped, had been finally settled, and it is to be regretted also that he has done so in an unfortunate manner which cannot be allowed to pass without comment.

His proposal essentially is that *Citrullus* should be deleted from the list of conserved generic names. I contend that this if accepted would for several reasons be an unwise and retrograde step. Article 14 of the International Code which provides for conservation has as its only reason for existence the promotion of stability in generic nomen-

clature, and, this being so it seems imperative that, once a name is placed on the list of *nomina generica conservanda* it should for all time remain there. Even if conservation is later shown to be superfluous, e.g., owing to new evidence on dates of publication having come to light, a name should be retained on the list. The name is thereby protected from being made illegitimate by the later discovery of obscure earlier homonyms.

Meeuse's argument that the conservation of *Citrullus* must be reconsidered as a new proposal is also open to serious criticism, this time from the point of view of the strict application of the type method. When *Citrullus* was originally conserved over *Colocynthis*, the latter was attributed to Ludwig, Inst. Regn. Veg. ed. 2: 139 (1757) whereas in fact it was first validly published by Miller (1754). However, both *Colocynthis* Ludwig and *Colocynthis* Miller are typified by the same species (the Colocynth) in accordance with the Tournefortian application of the name. Having the same type they cannot be considered as separate names and the original attribution of *Colocynthis* to Ludwig in the list of *nomina generica rejicienda* must be regarded as an error of citation only. This has been corrected by Rickett and Stafleu (Taxon 9: 121). In short, it is clear that *Citrullus* Schrad. has been effectively conserved over *Colocynthis* Mill. since its first inclusion in the list; those of the authorities quoted by Meeuse, and others, who have since used *Colocynthis* Mill. have done so by ignoring this fact and their work is as result nomenclaturally inaccurate. With regard to the currency of these names it is worth noting that in the literature of applied botany the name *Citrullus* has been almost universally used, and it will be used in my forthcoming account of the *Cucurbitaceae* for the "Flora of Tropical East Africa".

Properly interpreted, Article 14 of the Code as current is quite adequate to regulate practice in the conservation of generic names, and one feels loth to burden it with any further verbiage, but it may be that the proposals below may help to avoid further misinterpretations.

Add to Art. 14 the following notes:

1. A conserved name is conserved for all time and cannot be removed from the list of *nomina generica conservanda* even if the conservation is later shown to have been unnecessary or undesirable.

2. A *nomen rejiciendum* is to be rejected from its earliest date of valid publication regardless of whether or not this is correctly cited in the current list of rejected names.

C. Jeffrey, Kew

PILIOSTIGMA v. ELAYUNA: AN APPEAL*

The Committee for Spermatophyta do so much thankless but valuable work on behalf of all who use scientific names for plants that it would be ungracious to question their decisions, unless compelled by most pressing reasons to do so. These decidedly exist, however, in the case of *Piliostigma* v. *Elayuna*, reported in Taxon 10: 123 (1961), where, by a vote of 7-4 (in favour, not against, eight ayes being necessary for the acceptance of a proposal), the conservation of *Piliostigma* against *Elayuna* was rejected by the Committee.

The arguments in favour of *Piliostigma* were reasonably stated by Keay, in Taxon 3: 65-6 (1954), and there is nothing in his proposal that need be withdrawn. It is clear, however, that his moderation was not enough to convince all concerned that the proposal was not being put forward lightly, but with the emphatic purpose of avoiding changes in names disadvantageous not only to taxonomists but also to those many workers in Africa to whom *Piliostigma* has by now become very familiar indeed. It seems that the case needs restatement.

Two reasonable taxonomic views have been adopted in connexion with the matter we are considering. Some botanists hold the view that *Bauhinia* L., *sens. lat.*, is a single good, natural genus, and this was the opinion expressed by Wilczek in the Flore du Congo Belge et du Ruanda-Urundi 3: 275-8 (1952), and there is much that can be said in favour of it. But, to those of this opinion, the case of *Piliostigma* v. *Elayuna* is wholly irrelevant, since they would consider both names to be taxonomic synonyms of *Bauhinia*.

The other view, that *Bauhinia* (in a wide sense) is a natural group of related but distinct genera, has gained many adherents during recent years, and had been adopted in an

* Already submitted to the General Committee on Botanical Nomenclature.

increasing number of works. It is here that the need for the conservation of *Piliostigma* is most apparent. If segregate genera are to be recognised in the *Bauhinia* complex, there is merely inconvenience, vexation, and altogether needless labour to be caused by the use of *Elayuna* instead of *Piliostigma*.

Keay, in his original proposal, stated that *Piliostigma* "has rapidly become well-known among botanists working on the flora of tropical Africa", and gave nine works in which the name had been used. This is now less than the truth, in that the name has become familiar also to those concerned with ecology, agriculture, and forestry. It might be thought that a name resurrected as recently as 1947 would still be used only in a limited range of unusually up-to-date literature. Keay's list of nine references was, however, only a selection. To prove the point, the name *Piliostigma* has been employed in the following twenty-one works *additional to those cited by Keay*. Furthermore, this again is merely a selection based on a brief spell in a library, and could be easily increased:

de Carvalho in Agronomia Lusitana 11: 265 (1949); de Wit in Reinwardtia 3: 530 (1950); Codd, Trees and Shrubs of the Kruger National Park: 66 (1951); Pichi-Sermolli, Miss. Studio Lago Tana: 60 (1951); Suessenguth & Merxmueller in Trans. Rhod. Sci. Assoc. 43: 17 (1951); Pardy, Notes on Indigenous Trees and Shrubs of Southern Rhodesia, Departmental Bulletin No. 1666 (1952); Wild, A Southern Rhodesian Botanical Dictionary of Native and English Plant Names: 112 (1952); Mullenders, La Végétation de Kaniama: 475 (1954); J. K. Jackson in Journ. Ecol. 44: 349 (1956); Torre & Hillcoat in Conspectus Florae Angolensis 2: 199 (1956); Deighton, Vernacular-Botanical Vocabulary for Sierra Leone: 68 (1957); Goldthorp, Ecology and Land Use, in Rhod. Agric. Journ. 54: 414 (1957); Roti-Michelozzi in Webbia 13: 173-8 (1957); Clayton in Journ. Ecol. 46: 233, 234 (1958); Keay, Fl. West Trop. Africa, ed. 2, 1: 444 (1958); A.E.T.F.A.T. Vegetation Map of Africa: 9, 16 (1959); Langdale-Brown, The Vegetation of Buganda (Mem. Research Div., Dept. Agric., Ser. 2, No. 2) 80, etc. (1959); Phillips, Agriculture and Ecology in Africa: 178-9 (1959); Turner & Fearing in Amer. Journ. Bot. 46: 50 (1959); Langdale-Brown, The Vegetation of the West Nile, Acholi, and Lango Districts of Uganda (Mem. Research Div., Dept. Agric., Ser. 2, No. 3:) 98, etc. (1960); Langdale-Brown, The Vegetation of the Western Province of Uganda (Mem., etc., Ser. 2, No. 4:) 101, etc. (1960).

It will be seen that the name has been used in several important African floras, as well as in the latest revision of the *Bauhinia* group in Malaysia.

Although containing only three species, *Piliostigma* has a very wide range. The Asiatic species occurs from India to Cochin China, Indonesia, the Philippines, and Australia, and is said to be common to abundant in certain places. The genus occurs in the following African territories: Senegal, Gambia, Portuguese Guinea, Republic of Guinea, the Sudan Republics, Sierra Leone, Ivory Coast, Ghana, Nigeria, Cameroons, Ubangi, Congo, Ethiopia, Uganda, Kenya, Tanganyika, Moçambique, Nyasaland, Northern Rhodesia, Southern Rhodesia, Angola, Transvaal, South West Africa. As Keay stated, it is widespread, abundant, and of considerable ecological (and economic) importance in Africa.

The rival name *Elayuna* which had then never been used by a single person since its first occurrence, has still apparently not been employed by anyone in the interval that has elapsed since Keay made his proposal. It remains to ask the Committee for Spermatophyta to reconsider their rejection of *Piliostigma*, bearing in mind that the principle of *nomina conservanda* is already incorporated in the International Code of Botanical Nomenclature "to avoid disadvantageous changes in the nomenclature of genera ...". It is judicially altogether improper if opinions on whether the *principle* of conservation is good or bad play any part in forming decisions on individual cases. The main criterion against which each proposal must be weighed is: will the rejection of a name cause nomenclatural changes so important or so numerous that it is desirable that a more familiar but incorrect name should be conserved to avoid them? The degree of disadvantage at which conservation becomes desirable is, no doubt wisely, not defined, nor is the scope of the disadvantage. Botanists as well as others are entitled to benefit from the effects of the illogical but convenient provision of *nomina conservanda*. No limitations have been placed by the International Code on the size of genera whose names are to be conserved: the names of small wellknown genera are as much entitled to seek protection as those of large. Furthermore, small, even monotypic, genera often hold such morphological or other interest that their names have been widely used in non-taxonomic works and

changes in these cause considerable difficulty to the users of such works. Taxonomists themselves are less affected than any others, since they are accustomed to using plant names in the context of their synonymy.

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NEW I.D.C. MICROFICHES

New microfiche editions from the International Documentation Centre AB, Hågelby Hus, Tumba, Sweden:

Adanson, M. — Familles des Plantes. Paris, 1763. 2 Vols. cccxxv + 190 p., 24 + 4 + 640 p. — $ 9.50.

Adanson, M. — Histoire naturelle du Sénégal. (Coquillage.) 190 + xcvj + 175 p. 19 tab. Paris, (Bauche), 1757. 80. — $ 5.00.

Ainslie, J. R. — List of plants used in native medicine in Nigeria. Oxford, 1937. 92 p. (Imp. Forest. Inst.) — $ 1.50.

Bentham, George — Labiatarum Genera et Species. London, 1832-36. lxviii + 783 p. 22 cm. — $ 7.00.

Buek, H. W. — Index Generalis et specialis ad A. P. Decandolle, prodromum systematis naturalis regni vegetabilis. Berolini, 1842. 4 Vols. — $ 15.00.

Clusius, Carolus. — Rariorum plantarum historia. Antwerpen, 1601. Folio. (12), 364, ccxlviii, index (8), Appendix (26) p. — $ 9.00.

Don, George — A general history of the Dichlamydemus plants. London, 1831-38. 4 Vols. — $ 59.00.

Franchet, A. & Savatier, Lud. — Enumeratio Plantarum in Japonia sponte Crescentium. xiv + 485; 789 p. 2 Vols. Paris 1875. — $ 10.50.

Fresenius, G. — Beiträge zur Mykologie. Heft I-III. Frankfurt, 1850-1863. (6), 111 p. 13 f. — $ 1.50.

Kotschy, T. & Peyritsch, Jean. — Plantae Tinneanae, ad flumen Bahrel-Ghasal eiusque affl. in Sept. int. Africae part. 6, VIII, 54 p., 25 tab. Vindebonae, 1867. 55 cm. — $ 2.50.

Lessing, Chr. Fr. — Synopsis Generum Compositarum ... Capensium. xi + 473 p. 1 Pl. Berlin, 1832. 21,5 cm. — $ 4.00.

Linnaeus, Carolus — Hortus Cliffortinaus. Amsterdam, 1737. Folio. — $ 8.00.

Magnol, P. — Botanicum Monspeliense, sive plantarum circa Monspelium nascentium. Monspelii, 1686. (Pref.) + 309 p. Index. — $ 2.50.

Prain, David — Flora of Tropical Africa. Vol. 6, part 2. 192 p. London, 1916. 22,5 cm. — $ 2.00.

Presl, C. B. — Symbolae Botanicae, sive descriptiones et icones plantarum novarum aut minus cognitarum. Prague, 1832. 76 p. 50 tab. — $ 4.50.

Reichenbach, Ludovico. — Flora germanica excursoria, sive princ. synopseos plantarum. Sectio li-iii. Leipzig, 1830-33. 15 cm. — $ 6.50.

Salisbury, R. A. — The Genera of Plants. (A fragment, containing part of Liriogame.) London, 1866. vi + 143 p. — $ 1.50.

Schweinfurth, Georg. — Beiträge Flora Aethiopiens. xii + 311 p. 4 tab. 34 cm. Berlin, 1867. — $ 4.00.

Thunberg, C. P. — Prodromus Plantarum Capensium. (12), 177 p. Upsala, 1794. 21 cm. — $ 1.50.

Visiani, Robertus — Flora Dalmatica sive enum. stirpium vascularium. Lipsiae, 1843-52, 3 vols. + Suppl. — $ 12.00.

MISSOURI BOTANICAL GARDEN

The Eighth Annual Symposium on Systematics will be held at the Missouri Botanical Garden on Friday and Saturday, October 20 and 21. The subject of this year's Symposium will be "The Population Concept in Systematics."

The classification of both animals and plants was, for many years, essentially the classification of museum specimens. Modern systematics, however, considers organism as populations occurring in nature, and treats museum specimens only as samples of these natural populations. The 1961 Symposium will consider the effects of this change in viewpoint on plant and animal systematics.

The Symposium will be led by Dr. W. Frank Blair, University of Texas, and Dr. Richard W. Pohl, Iowa State University. Five invited papers will be given on different aspects of the problem as it relates to botanical and zoological systematics. The Symposium is supported by a grant from the National Science Foundation.

For further information address Dr. Robert L. Dressler, Editor of the Missouri Botanical Garden ANNALS.

NATIONAL SCIENCE FOUNDATION

The Division of Biological and Medical Sciences of the National Science Foundation announces that the next closing date for receipt of basic research proposals in the life sciences is September 15, 1961. Proposals received prior to that date will be reviewed at the fall meetings of the Foundation's advisory panels and disposition will be made approximately four months following the closing date. Proposals received after the September 15, 1961 closing date will be reviewed following the spring closing date of January 15, 1962.

Inquiries should be addressed to the Biological and Medical Sciences Division, National Science Foundation, Washington 25, D.C.

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OLAF HAGERUP
(1889-1961)

A. Skovsted (Copenhagen)

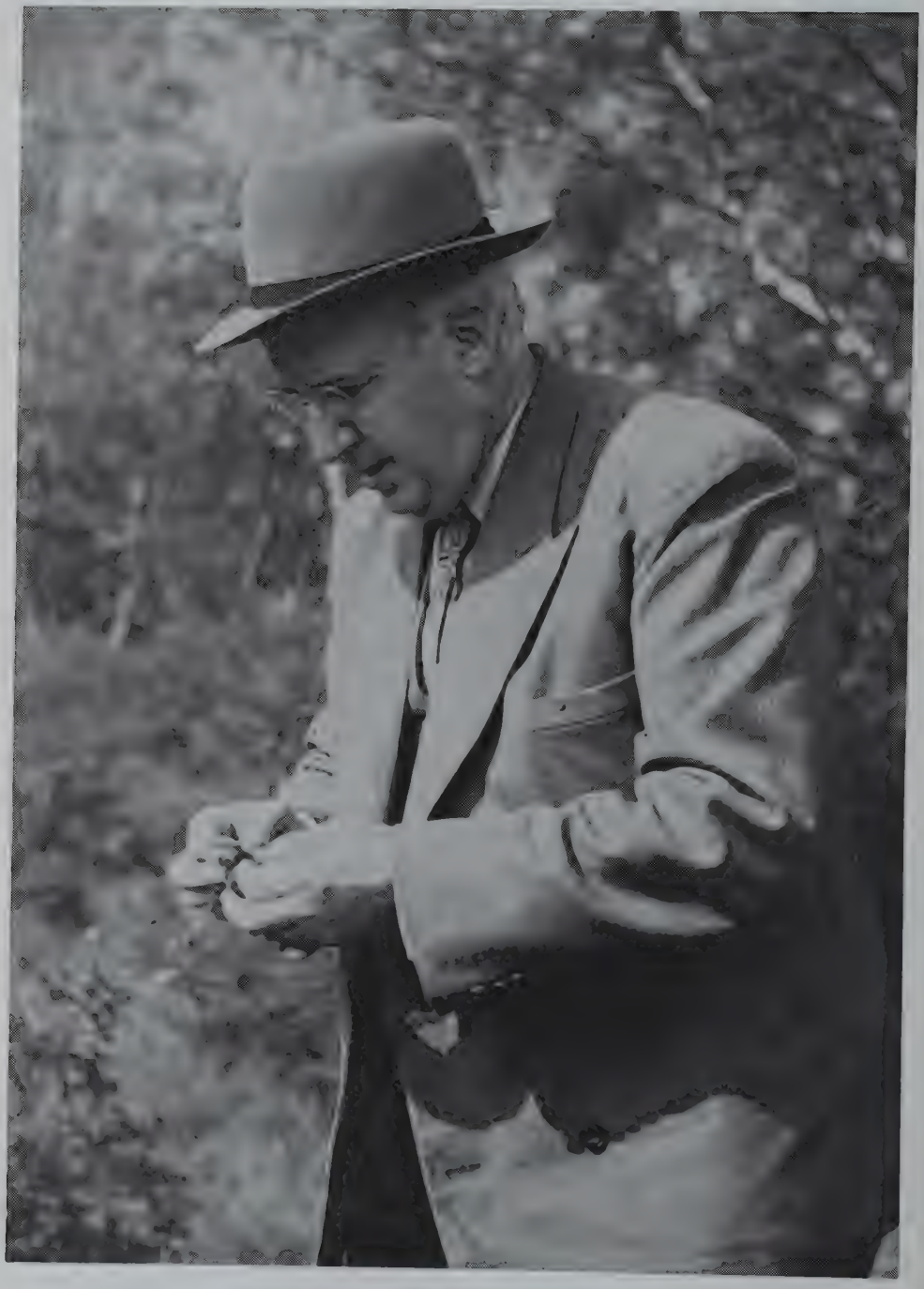
Olaf Hagerup, born in Jutland on the 29th September 1889, was the son of the Rev. Eiler Hagerup and Kirstine (née Asmussen). He spent a happy youth out on the moorland, and the interest of his family in natural science and religious problems, together with his natural skill in drawing, marked the whole of his life.

After a short time in horticulture, he matriculated at the University of Copenhagen in 1911, where he studied botany under Eug. Warming, L. Kolderup Rosenvinge, C. Raunkiaer and W. Johannsen. Hagerup himself claimed that Raunkiaer's ideas of plant geography fascinated him immensely, but in many respects he may be regarded as the last personal pupil of Warming.

In his years of study Hagerup made two long expeditions, one to Sumatra, where he spent a whole year (1916—17) in the tropical jungle visiting his brother, who was working there as an engineer. This trip was arranged as a tour round the world. During 1922—23 he stayed on the Faroe Islands for many months. In November 1923 he graduated from the University of Copenhagen.

He spent the summer of 1924 on the east coast of Greenland, where the Scoresby Sound colony was just being founded, and the following summer he went to the west coast of Greenland. In the spring of 1927 he went as botanist on an expedition to the Niger starting in Dakar and spending three months of "summer holidays" in Timbuktu, and then went by a boat to Niamey, where he left the river and went by car to Zinder, and finally to Lagos in Nigeria. He was badly attacked by dysentery, and he used to say that it was during one of these attacks, when sitting under a shrub, that he got the idea which he worked out in the paper "Vergleichende morphologische und systematische Studien über die Ranken und andere vegetative Organe der Cucurbitae und Passifloraceen", for which in December 1930 he took his doctor's degree at the University of Copenhagen.

In February 1935 he became Curator at the Botanical Museum of the University of Copenhagen. Up to that time he had subsisted on grants and an occasional half-time assistant job. He married Else (née Larsen) the same month. She was a student of botany and they lived happily together with their two daughters. In October 1959 Hagerup was to have retired, having reached the age of 70, but he had his term of office prolonged until February 1960, when he celebrated his silver jubilee. In December 1960 he was admitted to hospital for an operation and died about three months later on the 22nd March 1961.



Olaf Hagerup

Hagerup was a biologist with a keen interest in living nature, both plants and animals. The long stays in many different climates and vegetations from the jungle of Sumatra to African desert, the temperate wet Faroe Islands and the Arctic of East and West Greenland — all these had sharpened his powers of observation and made him a uniquely keen observer in nature. Apart from the botanical papers quoted in the bibliography he also wrote several zoological papers, e.g. about communities of birds. In botany he published papers on Lichens, Fungi, Mosses, Conifers, and Angiosperms, considered from the viewpoint of morphological, embryological, plant-geographical, phylogenetic, or pollination biology. His natural skill in drawing, which he enjoyed practising, has resulted in the illustrations not only in his own papers, but also in the papers of several other Danish botanists, such as Børgesen's papers on Algae. Hagerup claimed to be word-blind, but in this respect Mrs. Hagerup was a great help to him. He was very fond of illustrating his ideas in drawings, as in his two books (1956, 1960). When in hospital it was a great relief to him that the second book of mosses was finished.

Apart from natural sciences he often lectured on biology and religion at religious meetings, just as he was interested in social welfare work, in particular among people down and out due to unemployment and alcohol.

Dr. Hagerup was a very kind man, very helpful to colleagues, not interested in great congresses, but happy to meet colleagues in the museum or at his home.

BOTANICAL PUBLICATIONS

Olaf Hagerup

1915

The structure and biology of arctic flowering plants. II. 10. Caprifoliaceae. (Linnaea borealis L.) — Medd. Grønl. 37: 151-164, 6 f.

1917

Lichener. (H. E. Petersen: Maglemose etc.). — Bot. Tids. 36: 79-80.

1922

Om Empetrum nigrum L. En naturhistorisk Studie. (On Empetrum nigrum L.) — Bot.Tids. 37: 253-304, 21 f.

1923

Om "Lobelia-Diagram" hos Erica cinerea L. Bot. Tids. 38: 137-140, 6 f.

1926

Kønsdelenes bygning og udvikling hos Koenigia islandica. — Medd. Grønl. 58: 197-204, 6 f.

1927

Empetrum hermaphroditum (Lge) Hagerup, a new tetraploid, bisexual species. — D. Bot. Arkiv 5 nr. 2. (17, 5 f.).

1928

En hygrofil bælgplante (Aeschynomene aspera L.) med bakterieknolde på stængelen. — D. Bot. Arkiv 5 nr. 14. (9, 9 f.).

Morphological and cytological studies of Bicornes. — Ibid. 6 nr. 1. (27, 43 f.).

1930

Études des types biologiques de Raunkiær dans la flore autour de Tombouctou. — V. S. Biol. Medd. 9, 4. (116, 5 f., 5 pl.).

Über die Bedeutung der Schirmform der Krone von Acacia seyal Del. — D. Bot. Arkiv nr. 4. (20, 5 f., 1 t.).

Vergleichende morphologische und systematische Studien. Über die Ranken und andere vegetative Organe der Cucurbitaceen und Passifloraceen. Dansk Resumé. — Kbh. Dr. Disp. og Ibid. 6 nr. 8. (104, 119 f.).

1932

On pollination in the extremely hot air at Timbuctu. — Ibid. 8 nr. 1. (20, 29 f.).

Über Polyploidie in Beziehung zu Klima. Ökologie und Phylogenie. Chromosomenzahlen aus Timbuktu. Hereditas 16: 19-40, 34 f.

1933

Studies on polyploid ecotypes in Vaccinium uliginosum L. — Hereditas 18: 122-128, 2 f.

Zur Organogenie und Phylogenie der Koniferen-Zapfen. — V. S. Biol. Medd. 10, 7. (82, 146 f.).

1934—1938

Zur Abstammung einiger Angiospermen durch Gnetales und Coniferæ. — Ibid. 11, 4. (83, 117 f.). 1934. — II. Centrospermae. — Ibid. 13, 6. (60, 167 f.). 1936. — III. The Gynaecium of Salix cinerea. — Ibid. 14, 4. (34, 49 f.). 1938. (IV. se nr. 26).

1935

Zur Periodizität im Laubwechsel der Moose. — V. S. Biol. Medd. 11, 9. (88, 94 f., 3 t.).

1938

A peculiar asymmetrical mitosis in the microspore of Orchis. — Hereditas 24: 94-96, 8 f.

Studies on the significance of polyploidy. II. Orchis. — Ibid. 258-264, II f. (I = nr. 14).

1939

— III. Deschampsia and Aira. — Ibid. 25: 185-192. 10 f.

On the origin of some Angiosperms through the Gnetales and the Coniferae. IV. The gynaecium of Personatae. — V. S. Biol. Medd. 15, 2. (39, 95 f.). (I-III. se nr. 16-18).

1940

Studies on the significance of polyploidy. IV. Oxycoccus. — Hereditas 26: 399-410, 25 f.

1941

Zytoökologische Bicornes Studien. — Planta 32: 6-14, 15 f.

1942

The Morphology and Biology of the Corylus-fruit. — V. S. Biol. Medd. 17, nr. 6. (32, 32 f., 1 t.).

1943

Myre-Bestøvning. (Pollination by ants). — Bot. Tids. 46: 116-123, 6 f.

1944

Notes on some boreal Polyploids. — Hereditas 30: 152-160, 21 f. (Særtryk 1943). Autorref. i Bot. Centralbl. N.F. 33: 395.

On Fertilisation, Polyploidy and Haploidy in Orchis maculatus L. sens. lat. — D. Bot. Arkiv 11, nr. 5. (26, 68 f.). — (Autorref. i Naturh. Tid. 8: 40-41, 3 f.).

Basidiens Cytologi hos Tremellodon gelatinosum (Scop.) Pers. (Summary: The Cytology of the Basidium of Tremellodon gelatinosum (Scop.) Pers.) — Friesia 3: 46-51. 19 f.

1945

Facultative Parthenogenesis and Haploidy in Epipactis latifolia. — V. S. Biol. Medd. 19, nr. 11. (14, 26 f.).

Basidiens Cytologi hos Lepiota (Limacella) lenticularis Lasch. (Summary: The Cytology of the Basidium of Lepiota (Limacella) lenticularis Lasch.) — Friesia 3: 96-100, 25 f.

1946

Studies on the Empetraceae. — V. S. Biol. Medd. 20, nr. 5. (49, 101 f.).

1947

The spontaneous Formation of Haploid, Polyploid, and Aneuploid Embryos in some Orchids. — V. S. Biol. Medd. 20, nr. 9. (22, 71 f.).

1950

Thrips pollination in Calluna. — V. S. Biol. Medd. XVIII, 4: 1-16, 7 f.
Rain-pollination. — Ibid. XVIII, 5: 1-18, 16 f.

1951

Pollination in the Faroes — in spite of rain and poverty in insects. — V. S. Biol. Medd. XVIII. (15): 1-48, 16 f.

1952

The morphology and biology of some primitive orchid flowers. — Phytomorphology 2: 134-138, 9 f.
Bud autogamy in some northern orchids. — Ibid. 2: 51-60, 18 f.

1953

Autogami hos Chamaeorchis (Engl. summ.). — Blyttia 11: 1-5, 6 f.
& Else Hagerup. Thrips pollination of Erica tetralix. — Se E. Hagerup 1.
The morphology and systematics of the leaves in Ericales. — Phytomorphology 3: 459-464, 14 f.

1954

Thrips-pollination in Hypochoeris radicata. — Nytt Mag. f. Botanik 3: 55-58, 1 f.
Autogamy in some drooping Bicornes flowers. — Bot. Tids. 51: 103-116, 18 f.

1956

& V. Petersson, Botanisk atlas. Danmarks dækfrøede planter Kbhvn. (1-550, 516 pl.) 1956.

1957

Wind Autogamy in Arbutus — Bull. du Jardin. Bot. État 27: 41.

1959

Prophylls as Sepals in Orchidaceae — Bull. of Research Counc. of Israel. Sec. D. vol. 7 D. 154-56.

1960

& V. Petersen: A Botanical Atlas vol. II: Mosses, Ferns, Conifers.

MULTIVARIATE METHODS IN TAXONOMY

W. T. Williams (Southampton) and J. M. Lambert (Southampton)

The 1961 Spring Meeting of the Systematics Association took the form of a symposium on the use of multivariate statistical techniques in taxonomic problems. It was held at the Botany Department, University of Southampton, and attended by some 60—70 members and visitors. The proceedings will not be published in full, but an outline of the content of the formal papers is given below.

MONDAY, APRIL 24TH (AFTERNOON)

P. Slater (Institute of Psychiatry, London). An introductory account was given, in elementary terms, of the basic principles of multivariate analysis with particular reference to the nature of the reasoning employed. Special attention was paid to (i) multivariate regression equations, (ii) discriminant functions, as a means of assigning an individual to groups of known characteristics, and (iii) component and factor analysis, as means of objectively classifying individuals into groups. Q and R techniques were defined and their relationship and difference explained by an example. The general principles were illustrated by reference to examples which arise in applied psychology. (1, 6, 10, 20, 28, 29, 32, 42, 45).

M. J. R. Healy (*Rothamsted*). The paper covered the specific use of discriminant analysis in elucidating taxonomic problems. If several measurements of taxonomic importance are taken on series of individuals belonging to several related groups, each individual may be represented by a point in p-dimensional space, where p is the number of measurements; the groups will then form a set of clusters of points. Such a representation is hard to visualize if p exceeds 2 or 3, and it is useful to form a picture of the situation in less than p dimensions if this can be done without any essential sacrifice of information. A slight extension of multiple discriminant analysis (28) provides a solution to this problem.

The technique was illustrated using data on the teeth of humans and anthropoid apes, and the results considered in relation to the australopithecine fossils. A detailed account has been published previously (3). The advantages and limitations of a purely metrical approach were discussed.

F. H. Whitehead (*Imperial College, London*). Discriminant analysis can also be regarded as a means of objectively assessing the relative importance of taxonomic characters. In taxonomy it is becoming increasingly the practice to reduce the variation being studied to measurable terms, and the simplest method of dealing with such data is to use the sum total of the numerical measurements. This, however, assumes that every character used has the same value in discriminating between taxa. Because of the nature of the variation, this is almost always an unjustified assumption. Alternatively, an arbitrary weighting factor can be given to a character thought to have more value than the rest of the characters; but this introduces a further element of subjectivity.

Discriminant analysis (11) enables one to arrive at the best weighting factor for each character. The method was used to distinguish between the annual species of *Cerastium* (46, 47); in an unpublished example the same method has been used for the investigation of complex populations of *Carex paniculata* and *C. appropinquata* together with putative hybrids.

In general, discriminant analysis is a very useful tool to be applied to *some* taxonomic problems; it is not of universal application. Its best use is not as a test of significance but in the preparation of a linear scale by which any example can be accurately referred to already determined groups. It can also be used to determine the best point at which to place the limits of taxa whose characters show overlapping and in which no criterion of the truly "yes"/"no" type exists.

TUESDAY, APRIL 25TH (MORNING)

W. T. Williams (*Southampton*). If the problem is not to assign an individual to an existing group, but to determine the limits of groups into which given individuals should be classified, the appropriate techniques are those of factor analysis. Three decisions must be taken: (i) is the correlation matrix to be R or Q? (ii) Is the correlation matrix to contain unities ("component analysis") or communalities ("factor analysis") in the principal diagonal? (iii) Is the factor pattern matrix to be rotated in search of simple structure? All methods have been used, and the paper discussed the different types of taxonomic information thereby obtained.

It is also important to consider the extent to which discontinuities exist in the population. If a population contains — as may occur rather easily in ecology — a complete discontinuity, components after the first may be impossible to interpret; the situation may be improved by rotation, but it may be preferable to subdivide the population by reference to the first component and thereafter proceed with parallel analyses. If the data is qualitative (1 or 0) an easy method of subdivision exists, since the attribute concerned in subdivision vanishes from the analysis; the method of

"association-analysis" is an easily-computed approximate solution for this case, but the approximation will be unsatisfactory in the absence of major discontinuities. (8, 14, 17, 20, 24, 25, 31, 42, 43, 49, 52).

A. Pettet (*Southampton and Nottingham*). This contribution illustrated the application of the R-technique of factor analysis to an investigation of the British representatives of the taxonomically critical *Melanium* subgenus of *Viola* (26).

The variation in eleven morphological attributes commonly used in taxonomic treatments of the plants was scored. A centroid analysis of the correlation matrix of these attributes with communalities in the diagonal cells suggested that only three factors were significant. An examination of the factor loadings of the attributes in the common factor space suggested that the factors were orthogonal. The factor specifications showed that, for the attributes analysed, the plants could be broadly divided into two main groups, one of which was composed of two partially overlapping elements.

The first factor could be described as the "general taxonomic factor" which is a measure of the common genetic background of the plants. The second was a morphogenetic one associated with the position on the axis of the node scored for analysis. The third factor cannot yet be identified.

J. G. Manners and R. C. Jancey (*Southampton*). This second example of the use of R-techniques in taxonomy dealt with the *Cladosporium herbarum/C. cladosporioides* group of Fungi Imperfecti. A preliminary centroid analysis suggested the presence of three significant factors; the matrix was therefore iterated to improve the communalities and subjected to a principal-axis analysis. The results indicated that the factors were correlated, so the factor pattern was rotated to oblique axes in search of simple structure.

The dominating factor was one involving mainly the 'classical' taxonomic characters, and it was clear that this factor had controlled the choice of material. The second factor involved mainly characters connected with the previous history of the isolates, while the third involved principally the physiological characters. In considering the relationship between the isolates, it is important to observe the extent of discontinuities in the distribution of isolates when this factor is involved. When the isolate specifications for the dominating factor with each of the other factors in turn, were plotted graphically, the '*cladosporioides*' isolates formed a fairly coherent group. The very few '*herbarum*' isolates were rather isolated, and further work will be required to determine whether such isolates are representative of a distinct taxon. (5, 19, 44).

M. H. Williamson (*Edinburgh*). Factor analysis can also be used to investigate changes in population densities, and in the structure of a community, over a period of time. This was illustrated from the average summer population of 23 entities (species or groups of related species) in the holoplankton of the north-west North Sea over a period of 11 years. Such a set can be regarded as a single community. The problem here was the grouping of the entities into sub-sets on the basis of their variation in abundance. This was a step towards understanding the working of the community and the effect on it of variation in the environment. (15, 53, 54, 55, 56).

Ranking methods were found useful. They produced quick, reliable indications of the sources of variance; they gave an approximate first component (20); they allowed an examination of non-normal data; they could be used as a check on the results from electronic computers; and they showed what calculations are not wanted, such as those which classify the entities by their average population densities. (55).

Product-moment correlations and latent roots and vectors were calculated on Glasgow University's DEUCE. The resulting classification was close to that of the rank analysis, the gains being in the discovery of the relative sizes of the sources of variation and in the possibility of identifying them.

P. H. A. Sneath (*National Institute for Medical Research*). Q-techniques have rarely been used in taxonomy, yet taxonomic practice is based on intuitive estimates of overall similarity between living creatures, and this amounts to a Q-technique, albeit a subjective and imprecise one. Comparative serology is also a kind of Q-technique (see 4, 23). Recent developments in applying quantitative methods to taxonomy (e.g. see 7, 12, 13, 18, 22, 24, 27, 33, 34, 35, 40) share several common features, notably (1) overall similarity is distinguished from phyletic relationship; (2) every feature is given virtually equal weight for creating the taxonomy; (3) large numbers of features are considered simultaneously. Since these concepts are extensions of the ideas of the botanist Michel Adanson (2) they are commonly called Adansonian.

Several methods for estimating overall similarity have been devised (7, 24, 30, 34). The first two methods can use continuous variables, while the two latter employ coefficients of association obtained from all-or-none attributes. By suitable coding and scaling any data can be used with all these statistics. Three of the methods carry the process a step further by grouping the operational taxonomic units (individuals or species) into taxa (see especially 37, 38, 39). These can be arranged in the familiar hierarchic trees (though these do not necessarily represent the phylogeny of the taxa). Criteria for judging hierarchic rank can also be obtained.

These methods are now being successfully applied in many fields, e.g. insects (24), plants (25) and particularly in bacteria (16, 21, 36, 41). They are of the greatest use in this group, which is particularly difficult taxonomically, and can be employed for more restricted applications such as biochemical properties of bacteria (e.g. 9). Their extension to other difficult groups such as yeasts and fungi imperfecti will be valuable. Both Q- and R-techniques will be increasingly used throughout taxonomy as it becomes increasingly a quantitative science.

The versatility of Q-techniques and their robustness is worth noting. They are relatively insensitive to changes in individual attributes or different samples of attributes. They have been employed in fields such as psychology, linguistics and ecology and are now being applied to subjects as diverse as clinical medicine, soil structure, and solving jig-saw puzzles. They would find a place in any field which raises the fundamental taxonomic problem of assessing the overall similarity between complex entities.

J. M. Lambert (*Southampton*). 'Association-analysis' is a method of subdivision of qualitative data based on the principles of factor analysis (48, 49, 50, 52). In ecological data consisting of presence-or-absence records of species in a number of quadrats (or stands), the analysis can take either of two forms: the *quadrats* can be classified on the basis of the species they contain (normal analysis), or the *species* can be classified on the basis of the quadrats in which they occur (inverse analysis). If quadrats are regarded as individuals and species as attributes (14), normal and inverse analyses are related respectively to Cattell's R- and Q-techniques (8).

The independent results of the two separate analyses can be combined in a "two-way table", in which the individual records are given a double reference in relation to divisions in the two directions (51). Since the same initial set of data is used in both analyses, some coincidence between the two results, related to the common factor pattern, may be expected; this is shown by a concentration of entries in certain cells of the table. The greatest degree of coincidence is seen in cells with a complete complement of entries from at least one species and one quadrat of the relevant groups, and such cells may be regarded as potential 'noda'; cells complete only in one direction provide 'sub-noda'; while those incomplete in both directions are regarded as unimportant and are not considered further. The entries may be still

further concentrated by finding the species which, for any quadrat-group, gives the best possible chance of factor-coincidence; similarly, for each species-group, the corresponding quadrat is required. Such species and quadrats can then be used to define the best possible species-quadrat blocks, all extraneous records being disregarded.

The final concentrates from the potential noda may be regarded as true "vegetation-units", with properties relevant to both species and habitat; the defining species and quadrat of such a unit may be regarded as its "characteristic" species and quadrat, in that they embody the essential features of the species and quadrat groups to which they belong. Concentrates from potential sub-noda may be regarded as "vegetation-facies", and may take the form of either "species-facies" or "habitat-facies" according to their mode of definition; they are clearly less important than the complete units, and can be ignored unless they fulfil certain additional requirements.

Examples of results from actual communities were used to illustrate the analyses discussed.

*

The meeting concluded with a demonstration of the Ferranti "Pegasus" electronic computer in the Computation Laboratory of Southampton University.

References

1. Aitken, A. C. 1951. Determinants and Matrices. Oliver & Boyd, Edinburgh and London.
2. Adanson, M. 1763. Familles des Plantes, Vol. 1, Preface pp. cliv *et seq.*, p. clxiii, p. clxiv. Paris: Vincent.
3. Ashton, E. H., Healy, M. J. R. and Lipton, S. 1957. The descriptive use of discriminant functions in physical anthropology. Proc. Roy. Soc. B. 146: 552.
4. Boyden, A. 1942. Systematic serology; a critical appreciation. Physiol. Zoöl. 15: 109-145.
5. Brett, M. A. 1948. The problem of *Cladosporium herbarum*. Trans. Brit. mycol. Soc. 30: 141-152.
6. Burt, Sir Cyril. 1940. The Factors of the Mind. University of London Press, London.
7. Cain, A. J. and Harrison, G. A. 1958. An analysis of the taxonomist's judgement of affinity. Proc. zool. Soc. Lond. 131: 85-98.
8. Cattell, R. B. 1952. Factor Analysis. Harper and Bros., New York.
9. Cheeseman, G. C. and Berridge, N. J. 1959. The differentiation of bacterial species by paper chromatography. VII. The use of electronic computation for the objective assessment of chromatographic results. Journ. applied Bact. 22: 307-316.
10. Eysenck, H. J. (Ed.) 1960. Experiments in Personality, Vol. 2. Routledge and Kegan Paul, London. (Part 3, Experiments in psychometrics, by P. Slater).
11. Fisher, R. A. 1941. Statistical Methods for Research Workers. 8th Ed., London.
12. Forbes, W. T. M. 1933. A grouping of the Agrotine genera. Ent. amer. ser. 2. 14: 1-40.
13. Gilmour, J. S. L. 1937. A taxonomic problem. Nature London. 139: 1040-42.
14. Goodall, D. W. 1954. Objective methods for the classification of vegetation. III. An essay in the use of factor analysis. Aust. J. Bot. 2: 304-24.
15. Glover, R. S. 1957. An ecological survey of the drift-net herring fishery off the north-east coast of Scotland. Part 2. The planktonic environment of the herring. Bull. Mar. Ecol. 5(39): 1-43.
16. Hill, L. R. 1959. The Adansonian classification of the Staphylococci. J. gen. Microbiol. 20: 277-283.
17. Holzinger, K. J. and Harman, H. H. 1941. Factor Analysis. Univ. of Chicago Press.
18. James, M. T. 1953. An objective aid in determining generic limits. Systemat. Zool. 2: 136-137.
19. Jancey, R. C. 1960. A taxonomic investigation into the *Cladosporium herbarum* complex, with particular reference to the use of statistical methods of data analysis. M.Sc. Thesis, University of Southampton.
20. Kendall, M. G. 1957. A Course in Multivariate Analysis. Charles Griffin & Co., London.

21. Liston, J. and Colwell, R. R. 1960. Taxonomic relationships among the Pseudomonads. Bact. Proceedings. 78-79.
22. Lysenko, O. and Sneath, P. H. A. 1959. The use of models in bacterial classification. Journ. gen. Microbiol. 20: 284-290.
23. Mainardi, D. 1959. Immunological distances among some Gallinaceous birds. Nature, London. 184: 913-4.
24. Michener, C. D. and Sokal, R. R. 1957. A quantitative approach to a problem in classification. Evolution 11: 130-62.
25. Morishima, H. and Oka, H. I. 1960. The pattern of interspecific variation in the genus *Oryza*. Evolution 14: 153-65.
26. Pettet, A. 1960. Variation in the British representatives of the Melanium subgenus of *Viola*. Ph.D. Thesis, University of Southampton.
27. Rao, C. R. 1948. The utilization of multiple measurements in problems of biological classification. Journ. R. statist. Soc. B. 10: 159-203.
28. ——. 1952. Advanced Statistical Methods in Biometric Research. Wiley, New York.
29. ——, and Slater, P. 1949. Multivariate analysis applied to differences between neurotic groups. Brit. Journ. Statist. Psych. 2: 17-29.
30. Rogers, D. J. and Tanimoto, T. T. 1960. A computer programme for classifying plants. Science 132: 1115-1118.
31. Slater, P. 1958. The general relationship between test factors and personality factors. Nature 181: 1225-6.
32. ——. 1960. The analysis of personal preferences. Brit. Journ. Statist. Psych. 13: 119-135.
33. Sneath, P. H. A. 1957a. Some thoughts on bacterial classification. Journ. gen. Microbiol. 17: 184-200.
34. ——. 1957b. The application of computers to taxonomy. Journ. gen. Microbiol. 17: 201-226.
35. ——. 1958. Some aspects of Adansonian classification and of the taxonomic theory of correlated features. Annali di Microbiologia ed Enzimologia 8: 261-268.
36. ——, and Cowan, S. T. 1958. An electro-taxonomic survey of bacteria. Journ. gen. Microbiol. 19: 551-565.
37. Sokal, R. R. 1958a. Quantification of systematic relationships and of phylogenetic trends. Proc. X internat. Congr. Ent. 1: 40-416.
38. ——. 1958b. Thurstone's analytical method for simple structure and a mass modification thereof. Psychometrika 23: 237-257.
39. ——, and Michener, C. D. 1958. A statistical method for evaluating systematic relationships. Kans. Univ. Sci. Bull. 38: 1409-1438.
40. Sturtevant, A. H. 1942. The classification of the genus *Drosophila* with descriptions of nine new species. Univ. Tex. Publ. No. 4213, pp. 6-51.
41. Talbot, J. M. and Sneath, P. H. A. 1960. A taxonomic study of *Pasturella septica*, especially of strains isolated from human sources. Journ. gen. Microbiol. 22: 303-311.
42. Thomson, G. H. 1951. The Factorial Analysis of Human Ability. Univ. of London Press.
43. Thurstone, L. L. 1947. Multiple Factor Analysis. Univ. of Chicago Press.
44. Vries, G. A. de 1952. Contribution to the knowledge of the genus *Cladosporium* Link ex. Fr. Baarn.
45. Wade, T. L. 1951. The Algebra of Vectors and Matrices. Addison-Wesley Press Inc., Cambridge, Mass.
46. Whitehead, F. H. 1954. An example of taxonomic discrimination by biometric methods. New Phytol. 53(3).
47. ——. 1955. Taxonomic studies in the genus *Cerastium*. Watsonia 3(4).
48. Williams, W. T. and Lambert, J. M. 1959. Multivariate methods in plant ecology. I. Association-analysis in plant communities. Journ. Ecol. 47: 83-101.
49. ——. 1960. Multivariate methods in plant ecology. II. The use of an electronic digital computer for association-analysis. Journ. Ecol. 48: 689-710.
50. ——. (in press). Multivariate methods in plant ecology. III. Inverse association-analysis. Journ. Ecol.
51. ——. (in press). Nodal analysis of associated populations. Nature.
52. ——, and Lance, G. N. 1958. Automatic subdivision of associated populations. Nature 182: 1755.

53. Williamson, M. H. 1960. The detection of associations of planktonic species. Rep. Challenger Soc. 3(12): 33.
54. ——. (in press). An ecological survey of a Scottish herring fishery. Part 4. Changes in the plankton during the period 1949 to 1959. Bull. Mar. Ecol. 5(48).
55. ——. (in press). A method for studying the relation of plankton variations to hydrography. Bull. Mar. Ecol. 5(48).
56. ——. (in preparation). The relation of plankton to soms parameters of the herring population in the northwestern North Sea. Rapp. Cons. Explor. Mer.

THE NAMING OF HYBRIDS

A reply to Dr. E. L. Little, Jr.

G. D. Rowley (Hertford)

Dr. Little calls for a uniform policy in the naming of hybrids (Taxon 9: 225—231. Oct.-Nov. 1960). Although concerned only with forest trees, his observations apply equally well to classifiers of all types of flowering plants to whom hybrids tend to be an anomaly, an embarrassment, a thorn in the fleshy nomenclaturally.

I think it important at the outset to stress that all plants are hybrids — all, that is, save for a few homozygous lines cultured in a nursery or laboratory. To emphasize the difference between "species" and "hybrids" and devise separate codes of names for both is unrealistic and leads to contradictory situations. Thus there are stable hybrid species in nature (*Rosa canina* and its allies) as well as man-made interspecific and even intergeneric hybrids which yet retain a remarkable degree of fertility (as ×*Heliaporus smithii*, Cactaceae). So far as classification of hybrids goes, it matters not a scrap whether the pollen was transferred by a bee at large or by a white-coated scientist wielding a sable brush (camel hair, I understand, is out of fashion). Produced by God or Mammon, hybrids are organisms as much deserving of recognition and naming as wild species. Admittedly there would be a plethora of binomials if a new epithet were invented for every cross, but this should be done only for hybrids of outstanding botanical, horticultural or economic importance, and here the existing Codes give us a useful choice of alternative methods. Having raised all possible crosses between the diploid roses of the Section Pimpinellifoliae, I could go ahead and invent for them 15 "specific" epithets as against the 6 belonging to the parent species, but it would be a worthless pastime since all but one or two clones are of scientific interest only, and these, if eventually introduced, could be covered by cultivar names and a hybrid formula. For breeding projects, field surveys and taxonomic experiments of this sort a formula suffices or some kind of shorthand notation outside the realms of Codes and priority publications. As an example, see "Kakteen-Sterne" by Haage & Sadovsky, 1958, where the hybrids of *Astrophytum asterias*, *A. capricorne*, *A. myriostigma* and *A. ornatum* are coded as CAPAS, MYRCAPAS and similar abbreviated symbols.

Admittedly our existing Codes are not without weaknesses — notably in the case of amphidiploids and apomicts. As I have already pointed out (Taxon 7: 155. Aug. 1958), there is a strong case for distinguishing hybrids of differing chromosome level, whose whole morphology and breeding system set them far apart from each other. The true-breeding allotetraploid is virtually a new species and merits a binomial to itself.

As for apomicts, the special treatment accorded to them by the Code seems to me unwarranted. Apomixis is just another means of vegetative propagation — of covering

a wide area with the same genotype in a short period of time. We do not make a special case of bracken, because it can cover a whole hillside with one clone, or of Dog's Mercury because a woodland may be filled with a single colony only. The species concept is merely debased by giving a separate binomial to every apomict. Look at the chaos it has led to in *Rubus* and *Hieracium*! Recommendation H. 5A could well be dropped from the Code — or replaced by a plea not to give specific rank to clones.

To Dr. Little in search of his policy for naming hybrid trees, I would therefore suggest:

1) Stick to a simple formula (and/or family or accession numbers) for plants under trial, listing the female parent first followed by the male, rather than in alphabetical order. (This lessens the amount of rearranging if some "hybrids" turn out to be accidental selfings).

2) Supplement the formula by a cultivar name when any line or clone is released for distribution.

3) Reserve binomials for a later stage for amphidiploids and well-tried hybrids likely to find a permanent place in botanical literature.

USTERIA Willdenow *versus* USTERIA Medikus

A. J. M. Leeuwenberg (Wageningen) and F. A. Stafleu (Utrecht)

The name *Usteria* was published twice in the year 1790 for entirely different plants: Medikus used it for a new liliaceous genus, often reduced to *Scilla* L., but now usually regarded as distinct under the name *Endymion*, whereas Willdenow used it for a new genus of Loganiaceae. The Willdenow name has hitherto been in continuous use and it is therefore of some importance to know whether or not it has priority over the Medikus name. The publications are as follows:

Usteria Willdenow in Cothenius, Disp. 1. 1790 (Jan-Mai); Willdenow, Schr. Berlin. Ges. Naturf. Fr. 10: 51. 1790 (Jun-Aug) (T.: *U. guineensis* Willdenow).
Monodynamis J. F. Gmelin, Syst. 2: 10. Nov 1791 (T.: *M. iserti* J. F. Gmelin, nom. illeg.).

Usteria Medikus, Acta Acad. Theod. Palat. Phys. 6: 480. 1790 (Mar-Mai) (T.: *U. hyacinthiflora* Medikus).

Cothenius' *Dispositio Vegetabilium methodica a staminum numero desumta* was published posthumously; Cothenius died, according to Pritzel (Thesaurus p. 70) and the Allgemeine deutsche Biographie (4: 517. 1876), on 5 January 1789 [sic]. Before his book was published, references were added to several names which had been published later in the year 1789 (e.g. on p. 19, sub 135, *Quivisia* Cavanilles, Diss. 7: 367. Apr 1789, and on p. 28, sub 216 '*Hoffmanna* [sic] Willdenow' in Römer et Usteri, Bot. Mag. 6: 15 published in the second half of 1789). We presume that the anonymous hand who took care of all this was that of Willdenow although we have no proof of this.

Cothenius' publication is dated 1790, but no indication of a more precise date has been found by us in the volume. The latest names mentioned date from the second half of 1789. On the other hand we know for certain that the book was out on 28 September 1790 because at that date Willdenow sent a copy of it to Banks (letter

at British Museum, Add. Ms 8097. 357, kindly consulted for us by Mr R. Ross) together with copies of his *Historia Amaranthorum* 1790 and his edition of Linnaeus' *Philosophia botanica* (Soulsby 449). The *Dispositio* was not mentioned, alas, in the 1790 or 1791 volumes of the Göttingische Anzeigen von gelehrten Sachen, but it was reviewed in the Magazin für die Botanik, edited by J. J. Römer and P. Usteri, 10: 144 (1790). The copy for this 10th volume ("Stück") was very probably prepared before 3 June 1790, this being the latest and last date in the volume mentioned, on p. 200. We realize that this is not direct proof, but the nature of the contents of volume 10 is such that we think it highly probable that the copy for it was ready by 3 June. This would mean that Cothenius' book had been received in Zürich by that date. We have no further data on the publication of the Magazin vol. 10. It was reviewed by the Allgemeine Literatur-Zeitung only on 21 April 1791 (1791(2): 143. 21 Apr 1791), together with volumes 11 and 12. The rather meagre result of all this is therefore that the *Dispositio* was published in all probability between January and May 1790.

The date of tomus VI, pars physica, of the *Acta Academiae Theodoro-Palatinae* cannot be established with any more precision than that of the *Dispositio*. It was reviewed in the same 10th "Stück" of the Magazin für die Botanik, which leads us to the conclusion that this book too must have been received at Zürich by 3 June 1790. Further proof of this is found in a review in the Gött. gelehrte Anz. 1790: 1017 on 26 June 1790. The review in the Allgemeine Literatur-Zeitung was published on 6 November [1790(4): 345. 6 Nov 1790]. In the book itself we find a note, dated 9 March 1790 stating that Medikus received a certain book at that date when the volume was "beinah im drucke geendigt". This means that volume 6 of the Acta, which was evidently published as a whole, appeared at any rate later than 9 March, and before 3 June 1790.

The first part of the 10th volume of the "Schriften der Berlinischen Gesellschaft Naturforschender Freunde", was reviewed in the Gött. gelehrte Anz. 1790(2): 1332 on 21 Aug 1790, so considerably later than the two other books. In it the reviewer remarks that the name *Usteria* Willdenow had already been used ("ein [sic] Name, den ein anderer Freund des Hrn. D. [Willdenow] bereits einer bisher zu den Hyacinthen gezählten Pflanze beygelegt hat"). Since Medikus' publication had been reviewed by the same journal on 26 June 1790, it is obvious that reference is made here to that publication. The *Dispositio* by Cothenius had not been reviewed by the Gött. gelehrte Anz. Although we have no further proof it seems to us that we may assume on the ground of the later review that this volume of the Schriften was published after the two other books in question, so after May and before 21 August 1790. Willdenow makes no reference here to his earlier publication in Cothenius.

With this scanty information we have to take a decision on the question which of the two *Usteria*'s has priority over the other. It is still possible that other information will come forward, but in the absence of more precise details we have to work with those given above. One would be inclined to say that there is a reasonable chance that Cothenius (Jan-Mai 1790, manuscript finished in 1789) was just a little earlier than Medikus (Mar-Mai, manuscript closed Mar 1790), but that is about all. In such a case we think that we are entitled to make a choice retaining *Usteria* Willdenow 1790 and to reject *Usteria* Medikus as a later homonym.

Usteria Willdenow has been in continuous use since its publication. *Usteria* Medikus has never been taken up again as far as we know. The name *Monodynamis* Gmelin was a substitute for *Usteria* Willdenow but Gmelin gives no reasons for this change, and he ignores the Medikus name. It cannot be said therefore that Gmelin made a choice or that he probably had further information. *Monodynamis* has not been used

again, as far as we know, except by Poiret (Dict. Sc. Nat. 32: 476. 1824). Since it is also very unlikely that the Willdenow and Medikus names were published simultaneously (on the contrary: the indications we have point to priority for the *Dispositio*) we cannot invoke Art. 64 of the Code (Paris and Montreal editions) which says that in such a case the first author who adopts the name in one sense must be followed. For these reasons we propose to follow established custom, which is to accept *Usteria* Willdenow.

Our choice is therefore to give Cothenius priority over Medikus and we hope that this choice will be followed until further evidence to the contrary is brought forward.

We may perhaps add one more note on the history of the publication of *Usteria* Willdenow. The genus was first described, but not named, by Willdenow in a letter dated 7 Nov. 1789 in Römer et Usteri, Magazin für die Botanik 8: 151. Apr (?) 1790. "Vor einigen Tagen untersuchte ich einige africanische Pflanzen .... fand ich ein sehr merkwürdiges neues Genus ....". He gives the characters and states that he is going to publish this new genus in the Schriften der Berlinischen Gesellschaft NaturforschenderFreunde. In the meantime, however, the generic name *Usteria* ('*Vsteria*') was published for it in Cothenius' book on p. 1 in a note saying "Communicata ab amicissimo Doctore Willdenow". Since Cothenius died on 5 January 1789, and since Willdenow discovered *Usteria* only in November 1789 it is clear that the name should be attributed to Willdenow alone. The circumstantial evidence quoted in this paper makes it also probable that it was indeed Willdenow who edited Cothenius' manuscript and who inserted the 1789 genera and the *Usteria* paragraph.

Christian Andreas Cothenius was born on 14 February 1708 in Anklam; he died in Berlin on 5 January 1789. He was trained to be a medical doctor, became "Hofrath" of king Frederic William I and "Leibarzt" (court physician) of king Frederic (II) the Great in Potsdam. He published very little: a few medical treatises and in botany only the *Dispositio*.

We are very grateful to Mr J. E. Dandy and Mr R. Ross for critically reading our manuscript and for the verification of certain details.

ABOUT THE USE OF PERSONAL NAMES IN TAXONOMICAL NOMENCLATURE

Aldo Pesante (Torino)

The preparation of an earlier note on a nomenclatural subject, led me to consider more attentively than before the use of personal names in taxonomical nomenclature, and the advantages and disadvantages which are connected with this practice. The subject, which at first seemed to me simple and of little interest, revealed itself afterwards, on the contrary, to be complicated and worthy of a detailed discussion. This is the reason for the present note.

The use of personal names in scientific nomenclature began with nomenclature itself, with latin binomial nomenclature at least. Linnaeus in his *Species plantarum* made considerable use of such names, and since then this use has never stopped, nor has it been, as far as I know, validly contested by anyone. The objection could be raised that there is now no reason for questioning this use. Is not a two centuries' long acceptance of it sufficient to prove its suitability?

I will try to answer these supposed objections by giving a detailed exposition with abundant examples, as is necessary in a paper like this one, the purpose of which is essentially persuasive.

The main reason for the use of personal names in nomenclature is sentimental; one wishes by their use to honour someone to whom one is bound by affection or by esteem. In past times, when manifestations of obsequious homage were much more frequent than they are today, new genera and species were often dedicated to high-ranked persons who had nothing to do with science; recently also an author gave to a number of species names of renowned men of antique Greece. But today this abuse has ceased, and students generally dedicate new entities to colleagues who are specialists on the group, and primarily to their teachers, less frequently to collectors, or to other persons. Mutual dedications are not uncommon and even recently there have still been one or two who gave their own name to a species or a genus, so strong is our longing to bind our name, or that of beloved persons, to something which could survive.

If the person so remembered is one whose name would otherwise hardly pass outside the narrow boundaries of his own institute, this method can, by flattery, have a beneficial inciting effect, and thus become a positive factor for the progress of science.

Besides these reasons, there is another, of an essentially practical nature; the ever increasing number of new species, to which one is obliged to give a name, can sometimes put the discoverer into difficulty; this can happen more often to those specialists who revise old genera and thus create several new species, frequently differing only in quantitative characters. In these cases the use of personal names can be a help. The long series of specific epithets, much less the many generic names, of this kind cannot always, however, be thus justified; frequently, I think, it is indolence which induces naturalists to have recourse to this method, which avoids the trouble, harder than one might think, of finding an expressive name for a new species.

These are the reasons supporting the use of personal names. I will now give those against it.

It has always been one of the main preoccupations of the various commissions which led gradually to the establishing of the present Code of botanical nomenclature*, "to avoid or to reject the use of forms and names which may cause error or ambiguity or throw science into confusion" (preamble). The Code deals with this fundamental subject in several places, defining different points of it, as I will discuss later, but is concerned only with orthography, while orthophony is wholly neglected, as if it had nothing to do with nomenclature.

An explanation of this fact can, I think, be found in the historical development of nomenclature. From its beginning in the middle of the eighteenth century until not many decades ago, communication among students was almost exclusively written, either by printed matter or, especially in more ancient times, by letters (which even gave the stamp of official recognition to scientific discoveries). In this situation, the rules of pronunciation of the names were superfluous. But today the efficiency and rapidity of transport facilitates personal contacts among students, with study travels and international congresses, and thus standardisation of pronunciation becomes more and more urgent.

Taxonomic names (I consider only those of genera and species, which are the most numerous) can be: old names (nearly all Latin or Greek ones) or vernacular names of genera and species, names arbitrarily formed, or derived from persons or from countries; adjectives derived from persons or from countries, qualificative adjectives. Of all these, only vernacular names and those derived from persons or from countries can give rise to difficulties as far as pronunciation is concerned; but the first ones

* International Code of Botanical Nomenclature. — Utrecht, 1956.

are infrequent, and those of countries are also not numerous, at least in comparison with those of persons. Therefore I will consider only these last, although some arguments will be valid for the others too.

As far as pronunciation is concerned, the Code, as I have said, makes no regulations, unless one takes as referring to it as well as to orthography, Principle V, which says: "Scientific names of plants are Latin or are treated as Latin".

If the Commission for nomenclature tries to resolve this problem (and sooner or later it must do so), it will find itself, as regards the names of persons, faced by this dilemma: are these names to be pronounced according to the phonetics of Latin or to that of the languages to which they belong?

Let us consider the two cases.

At a first glance it could appear logical that, nomenclature being Latin, foreign names should also bring themselves into agreement with the rules of Latin, but if examined more attentively, this solution appears to be illogical, impractical and even repugnant to our mind. If we Italians, in ordinary speech, pronounced, according to italian phonetics (which differ very little from those of Latin), names such as Sauvage, Fouquier, Desrousseaux, Church, Wright, Underwood, Lightfoot, Scheuchzer, Kirschstein, Ungnad, we would make anyone shiver who had even only a vague notion of the phonetics of the languages to which such names belong. Why then should such a violation be admitted in scientific nomenclature? What is substantially different in this regard between those names and the corresponding taxonomical derivates *Sauvagesia, Fouquiera, Rousseauxia, Churchii, Wrightii, Underwoodia, Lightfootia, Scheuchzeria, Kirschsteinia, Ungnadia*?

Each name has in fact its own physiognomy, which is derived from its origin and from its historical evolution within its own language; to pronounce it according to the rules of another language, which cannot take into account all that, is to denature it, to reduce it to a crowd of letters (and sounds) without any significance. Latin has been adopted as the international language in scientific nomenclature, and if it were suppressed, as has been proposed, the result would be chaos; but the names which one gives to new species can be pronounced in Latin only if they are Latin, or Greek, since these latter have, since remote times, been adapted to Latin according to well defined rules.

Some examples will more readily carry conviction as to the inadequacy of Latin (or any other language) for the pronunciation of names (and words in general) from different languages.

The letter *j*, considered in Latin as non-existent or equal to *i*, has different sounds in each of the following names: *Ranojevicia, Jeffersonia, Juania, Jussieua.* And likewise the digraph *ch*, which in Latin always has the same sound, has five different sounds in the following names: *Scortechinia, Charlwoodia, Deschampsia* (the preceding *s* is mute), *Eichhornia, Blumenbachia.*

It is impossible, moreover, to distinguish between groups of consonants in monosyllabic radicals which are connected and correspond to a single sound, and groups formed by the approach of two components in compound words, which groups are not connected and therefore do not correspond to a single sound: for inst. *Biddul*phia and *Shep.herdia*; *Gledi*tschia and *Bret.schneideria*; *Bruckenthalia* and *Kort.halsia*; Kh*ekia* and *Stack.housia*; *Shortia* and *Prings.heimia, Males.herbia* (*h* mute).

In other instances, on the contrary, letters or groups of letters which express a nearly identical sound would be pronounced, according to the latin phonetics, in many different ways: so for inst. the soft *c*, represented in the following names by the roman type letters: *Celsia, Sanchezia,* C*zekanowskia, Pri*tch*ardia, Ni*tschk*ea, Kret*zsch*maria.*

In many names, moreover, Latin pronunciation is not only illogical, but also difficult and bad: I cite, in addition to those above: *Vouauxiella, Eschscholtzia, Shropshiria, Pazschkea.*

The other solution, that is to pronounce the names according to the phonetic rules of their respective languages, comes up against considerable difficulties. The most serious of them is that such a solution would require the knowledge, by all naturalists, of the phonetic rules of many foreign languages, which is, evidently, utopia. Therefore, if the Code were to state, or even only to suggest, that personal names should be pronounced in this manner, it would be Babel. Let us imagine that at an international congress a lecturer pronounced in their respective languages names such as *Leea, Michauxia, Vogelia* (and they are not among the worst) to people without linguistic knowledge who did not know these names in advance: what could they understand?

Even if one knows the phonetics of the principal foreign languages one will be in doubt when one has to pronounce names the language of which one does not know; and this happens more often than one would think. I give some examples, indicating the nationality of the named person: *Bergera* (germ.), *Duchekia* (czech.), *Gerardia* (engl.), *Loudonia* (scottish), *Richardia* (engl.), *Roucela* (fr.), *Saurauia* (germ.), *Tegneria* (swe.), *Zignoa* (it.).

Sometimes the naturalization of students in countries of different language leads to a gradual adaptation of the pronunciation and even the spelling of their names to the language of these countries, so that one no longer knows how these names are to be pronounced.

Moreover, when taxonomic names are derived from personal names there are added to these, following invariable rules, terminations indicating their status as generic names or specific epithets, and, since these do not necessarily harmonize with the personal names, there sometimes arise still more doubts, although of less importance: for instance: *Neomillspaughia, Goodenoughii, Michauxia, Rouxii, Bogolepoffii**.

There are also personal epithets with the termination *-ii*, which could derive from names ending in a consonant as well as from names ending in *-i***.

Still another matter of doubt, and consequently of lack of uniformity, is the accentation of names. Must personal names maintain the original accent (if known!) or not? Must one say, for inst. Lìstera or Listèra; *Vàughani* or *Vaughàni*? For epithets with the termination *-ii* no doubt subsists, but this termination is only suggested (rec. *73 C, b*) and therefore not always used instead of *-i*.

Faced with these problems, what solution do naturalists adopt?

As far as I know, each one goes his own way, according to his linguistic knowledge and to his taste, even pronouncing a part of a name according to latin phonetics, the other part according to the phonetics of the language to which it belongs, or to which he thinks it belongs, for instance *Sauvagesia* is frequently pronounced Sovagesia.

In some rare cases a diacritical mark gives the answer; thus for instance the diaeresis that some authors put on *Kusanoöpsis* acts as a warning that the two *o* are not pronounced *u*; from which one deduces that in the mind of these authors this generic name, formed from a japanese personal name and a greek suffix, and introduced into latin nomenclature, ought to be pronounced in english.

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* The writing of the following epithets: *Woronowii, Woronovii* is more correct than the termination *-offii.*

** The Code, in rec. 23A, illustrating the formation of the epithets, cites, as the substantival and adjectival forms from a personal name, *clusii* and *clusianus;* but one must say that it has chosen a very rare exception!

The difficulties and the uncertainties which are large enough in the principal european languages, the source of nearly all the preceding examples, are even greater for other languages, especially those with non-latin alphabet, where transliteration is entailed. There exist, at least for some groups of languages, international rules of transliteration, but these will not serve our needs owing to the diacritical marks which they require, and which the Code rightly refuses. This renunciation leads to arbitrary transcription, in which the phonetic rules of the language of the author are generally followed, even when latin transcription would be easier: for instance, *Tranzschelia* instead of *Transcelia*; *Jaczewskia* instead of *Iacevskia* (if one prefers to maintain the *k*, more practical than *ch*). There are, moreover, in languages with non-latin alphabets, sounds not reproducible with latin letters, which are a further source of distortion in both written and spoken forms.

One can foresee that these disadvantages will become more frequent as, in future, the scientific contribution of remote countries, now in the phase of active development, becomes more considerable.

The Code, I repeat, says nothing on this question, but sooner or later the problem must be resolved, and this will not be easy.

Leaving pronunciation, or rather considering it now together with orthography, I will emphasize the inadequate way in which personal names accord with the recommendations of the Code.

Rec. *20 A*, *c* and *23 B*, *b* suggest that one should not make names very long or difficult to pronounce. These recommendations are very little observed. With this statement one does not intend to say that all personal names are difficult to write and to pronounce, and that the others have opposite qualities. *Fortunella* and *Roselinia* are certainly better than *Polylagenochromatia, Phrymaleptostachya* and *Pleuroplacosphaeria*; but for descriptive names one can at least rely upon the taste of the authors, whilst the form of the other ones is determined by that of the person whom one wishes to remember, who has not always a name running readily off the tongue nor well suited for latinizing, as was sometimes the custom in past times. And so our nomenclature was enriched with names such as *Biebersteinia, Bizzozeriella, Boenninghausenia, Cienfuegosia, Cruckshanksia, Fleischhackia, Gaylussacia, Grateloupia, Hohenbuehelia, Junghuhnia, Kaulfussia, Koelreuteria, Leuchtenbergia, Peyerimhoffiella, Razoumofskia, Roscoepoundia, Serebrianikowii, Spegazzinula, Vancampenhouti, Wojnowicia:* names which can be melodious to people of the same language, but are unpleasant to others.

Rec. *20 A*, *d* says "not to make names by combining words from different languages" but nearly all personal names are taken from languages other than Latin or Greek, and therefore, if combined with latin or greek prefixes or suffixes, give linguistic hybrids: for inst. *Bakerophoma, Boedijnopeziza, Fremontodendron, Phaeoschiffnerula, Raciborskiomyces, Schroeteriaster, Weimannodora, Xystozukalia.*

Rec. *20 A*, *e* suggests that one should indicate, if possible, by the formation or ending of the name the affinities or analogies of the genus; but if one wants to follow this recommendation for names of persons, one offends against the preceding one (see above).

Rec. *73 B*, *a* says: "When the name of the person ends in a vowel the letter *a* is added, except when the name ends in *-a*, when *-ea* is added."

However, if the pronunciation of personal names must be that of the languages to which they belong, one does not in some cases have the possibility of avoiding a double *a*: for inst. *Duroia* (but so far as aesthetics is concerned, it is difficult to say which of the two solutions is, in this case, the less unfortunate).

Rec. *23 B, d* suggests that one should avoid specific epithets formed of two or more hyphened words; but the care of authors of new species to see that the person commemorated is not confused with others of the same name has led more than once to the contravention of this sound rule of simplicity; and so we have a *Cercospora Donnell-Smithii*, a *Rhynia Gwynne-Vaughanii*, a *Phomopsis Fischeri-Eduardii*, an *Ascochyta Zimmermannii-Hugonis*; and, although not in contradiction with any written rule, a genus *Oscarbrefeldia*. We have indeed also qualificative epithets formed of two hyphened words (for inst. *Hydrocharis Morsus-ranae, Melampsora Laricis-Caprearum*), but these at least mean more as a result, which the others do not. This use of double personal names is reprehensible, since one ought not to put personal considerations before general ones, but owing to the superabundant use of personal names, it is doubtful whether this abuse will stop spontaneously.

The orthographic and orthophonic difficulties and uncertainties mentioned above seem to me sufficient to give an idea of the confusion caused by the use of personal names in scientific nomenclature. These difficulties and uncertainties will inevitably get worse if this use continues, with an increasing number of botanists in countries with languages very different in structure from Latin.

Another considerable inconvenience of personal names is that they take the place of other names, which, if well chosen, can have a descriptive basis and are therefore also easier to remember.

Rec. *33 A* of the 1952 Code [now deleted, Ed.] said: "The specific epithet should preferably give some indication of the appearance, the characters, the origin, the history or the properties of the species. If taken from the name of a person, it usually recalls the one who discovered or described it, or was in some way connected with it".

This was a very appropriate recommendation; but why did it not apply also to genera? Why may a generic name "be taken from any source whatever, and may even be composed in an absolutely arbitrary manner"? A judicious choice of names would be much more advisable for the genera, because they are representative, normally, of many species, and therefore recur more frequently!

The mnemonic value of names is an interesting subject, but generally neglected; one prefers to leave it to psychologists. And yet it has, in our case, considerable importance. The greater the increase in the number of the known species and of those which one is obliged to know for professional purposes, the more urgent is the need to be able to fix them in the mind in the most simple and firm manner. Then, it is evident that a significant name, which recalls a character of the species, has more mnemonic value than a name of person, unless everybody knows it to be connected with the named species; but this happens very seldom.

Here also an example will aid in clarifying one's ideas:

Higher fungi are one of the systematic groups for which names have been chosen with more care; but here also exceptions exist.

Let us consider, as examples, some names:

Tricholoma caligatum recalls to us the fringe of hairs which borders the hat, and the covering of scales which may be seen on the stalk below the ring, like a stocking (the termination *-loma* indicates to us, moreover, although not in an absolute manner, the systematic group to which the species belongs, according to the former rec. *30 A, d* (1952 Code, now deleted, Ed.).

Pleurotus perpusillus represents to us the lateral insertion of the hat and the exiguity of the fungus;

Armillaria mellea indicates the presence of a ring which surrounds the stalk, and the honey-coloured hat;

Marasmius scorodonius indicates the contraction of the drying fungus and its garlic odour.

These characters will not only be useful for recognizing the species, but also for remembering them. On the contrary, what do these other names, also of higher fungi, suggest to us: *Trogia Köningii, Gauthiera Otthii, Octaviania Hesseana*? If the reason for these names could still be found (in the original writings if given, in some rare textbook which reports it, in some even rarer dictionary of botanical etymology), one could have only an unnatural connection of very weak, if any, evocative force.

One can find numerous similar examples in all systematic groups; so for instance in the family Chenopodiaceae: *Chenopodium, Corispermum, Camphorosma,* and, opposed, *Kochia*; in the Caryophyllaceae: *Dianthus, Gypsophila, Saponaria, Tunica,* and *Velezia*; in the Saxifragaceae: *Saxifraga, Chrysosplenium, Philadelphus,* and *Zahlbrucknera*; in the Compositae: *Pulicaria, Buphthalmum, Asteriscus, Calendula,* and *Siegesbeckia, Rudbeckia.*

The objection could be raised that personal names also can very well call to mind the corresponding species, as *Magnolia, Dahlia, Robinia, Begonia, Gardenia, Camellia,* and still many others. Certainly, with long use, these names also become familiar and acquire a decided mnemonic value, but this happens through a very long process of assimilation, which cannot apply to the very large number of new species, which are continually introduced into nomenclature.

The considerable number of personal names which saturate the nomenclature is not even proportional to that of the persons who more or less deserved to be remembered, but is much larger than this, because to a same person are often dedicated more, sometimes, many, species, or even genera. So for instance, the following genera take their name from the mycologist Henderson (omissions excepted): *Hendersonia* (2), *Hendersoniella, Hendersonina, Hendersoniopsis, Hendersonula, Hendersonulina* (2), and then *Microhendersonia,* and *Phyllohendersonia,* and *Urohendersonia* (yet dedicated to him, and not, as one could think, to some Urohenderson, *viro clarissimo et cauda ornato*), and *Neohendersonia.* And with the same prefixes but with different names, other series of names have been made; so for inst. with the prefix *neo-*: *Neobarclaya, Neobertia* and so on to *Neozimmermannia.*

The habitat of parasites on hosts with names of this sort is further cause of repetition of personal names: for inst. *Pestalozzia Banksiana, Libertella Gleditschiae, Septoria Rudbeckiae.*

This congeries of names is a heavy burden in nomenclature, and if we do not have a clear perception of this, the reason is that we have borne this burden, like original sin.

But what is the destiny of these names, which we prize so much? It is not always brilliant. Many of them fall into synonymy. There are young naturalists especially, whose judgment is not yet mature but who are anxious to create new species and to dedicate one to their teacher, who nourish the perennial source of synonyms.

But even if these names remain valid, how many are the possible causes of their degradation!

Too often written, if epithets, with small initial letter, distorted in the most different languages, degraded with beastly, obscene, or at least unlovely attributes and combinations (*Ceratolejeunia, Trichodelitschia, Rostronitschkea, Thaxterogaster, Mutinus Muelleri, Verpa Brebissoni, Echinophallus Lauterbachi, Ithyphallus Ravenelii, Sordaria Winteri, Coprolepa Saccardoi* [close to a more connatural *C. merdaria*],

Philocopra Hansenii, Lobelia syphilitica); confused, if very common, in a plenitude of homonyms (think of the *Smith* and *Mueller*), subjected even to ludicrous extra-taxonomical adaptations (venturicide); what remains uncontaminated in them, except the good intention of the donor?

Time gives the final blow: understood at first in their commemorative significance by a comparatively small number of naturalists, these names turn subsequently to names without any human character: names of vegetables and no more.

Conclusion

The use of personal names in nomenclature leads to difficulties of writing and pronunciation, to doubts, to confusion. This use has, besides, the great disadvantage of putting in the place of expressive names, others which are not, and which have, therefore, less mnemonic value.

One may expect that this situation will in future become progressively worse: on the one hand the more frequent oral relations among students will make the disadvantage of arbitrary pronunciation of personal names more apparent than it has been; on the other hand a more intense scientific activity by students of countries whose languages have non-latin alphabets will, more than in the past, introduce into nomenclature obscure names which do not harmonize with Latin and which will become altered in writing and pronunciation.

How can we put an end to all this?

Names at present existing may not be changed: Code (art. 17) and good sense do not allow it; nor can one rely on a latinization of foreign names, as in the distant past: it would be an anachronistic and absurd hope. Old rec. *33 A* (Specific epithets should preferably give some indication of the appearance etc.) was suitable, but inefficient because not compelling.

The only efficient measure would be a rule which excluded in the future the use of personal names for the coining of scientific names in taxonomic nomenclature. I propose such a rule to the Commission for the revision of the Code of Botanical Nomenclature.

IS SAPOSHNIKOVIA A VALID GENUS?

Sophia G. Tamamschian (Leningrad)

This question is raised in connection with the fact that in the most recent works on the family Apiaceae (Hiroë 1958, Kitagawa 1960) the genus *Saposhnikovia* is treated as a synonym of the genus *Ledebouriella*. Is Hiroë justified in replacing the species name *S. divaricata* (Turcz.). Schischk by the new combination *L. divaricata* (Turcz.) Hiroë?

Let us trace the history of the nomenclature of both genera.

Hoffmann (1816) described the genus Rumia with three included species, viz. R. seseloides, R. taurica and R. microcarpa; at present the last species is classified as belonging to the genus Hippomarathrum. As has been established by Koso-Poljansky (1915) R. taurica is identical with a species erroneously referred by Willdenow to the genus Sanicula and named S. crithmifolia. The new combination, Rumia crithmifolia (Willd.) Koso-Poljan. has been generally adopted in the literature on the taxonomy of the Apiaceae.

Ledebour (1829) at first transferred R. seseloides to the genus Trinia. Later (1844) he described a new species, R. multiflora. The obvious differences in the structure of the fruit of this species from the fruits of both Rumia and Trinia induced Wolff (1910) to establish a new genus, (Fig. 1) Ledebouriella. A specimen of Willdenow's of obscure geographical origin served as the type of the new genus. Referring to this specimen, no. 5768 in the Berlin Herbarium, Wolff states that "according to Willdenow and Link this species is indigenous to Crimea, while according to Boissier the native locality is unknown, but at any rate it is certainly not Crimea" (p. 192). Besides that, Wolff (p. 190) points out that in Willdenow's herbarium three sheets are designated by this number. These sheets contain two different species under the same name, Cachrys taurica, one of these species being undoubtedly Hippomarathrum crispum Koch, while the other one is apparently Ledebour's Rumia multiflora (p. 190). (For more details about this species see the "Flora URSS" 16: 363.)

Fig. 1. Ledebouriella multiflora.

In establishing the second species of Ledebouriella, L. seseloides, Wolff had at his disposal no herbarium specimens and based his conclusions only on the descriptions of this species made by Hoffmann and Ledebour, and also on the following two drawings: (1) the drawing of the fruit on the title-page of the "Genera Umbelliferarum" (fig. 4); (2) the plate in the "Iconographia Florae rossicae" (pl. 8). It should be pointed out in this connection that in the list of drawings of Rumia crithmifolia (= R. taurica Hoffm.) given by the "Flora URSS" p. 361 (with a reference to Hoffmann), fig. 4 is mentioned erroneously: it is clear from the explanation to Hoffmann's drawings (p. 205) that fig. 4 is a drawing of R. seseloides, i.e. L. seseloides in Wolff's sense. The only drawing of R. taurica is fig. 17, while figs. 3 and 21 are drawings of R. microcarpa. The type-specimen of this species referred to by Wolff came from the Chinghis-tau Mountain (Western Siberia) and is now maintained in the Herbarium of the Botanical Institute in Leningrad.

From the above mentioned drawings it is clear that in this species the ribs of the fruit are transversely-plicate-grumous like those of L. multiflora. It should also be pointed out that unfortunately in the same vol. 16 of the "Flora URSS" the drawing of the cross-section of the mericarp of an immature fruit (plate XXX) does not give the correct idea of the form of this fruit, consequently of the species itself.

Koso-Poljansky (1915, 1920) erroneously referred both these species (L. multiflora and L. seseloides) to Johrenia sieversii; the fruits in the genus Johrenia have but a superficial resemblance to those of Trinia, but differ distinctly from the fruits of Rumia, Ledebouriella, and Saposhnikovia.

The history of nomenclature of the genus Saposhnikovia is clear from the list of synonyms in vol. 17 of the "Flora URSS" (p. 54) as well as from my article in Notulae systematicae (1951) where the diagrams of the cross-sections of the mericarps of L. multiflora and S. divaricata are given.

Unfortunately, Johrenia seseloides (a combination proposed by Koso-Poljansky) is included in the "Flora URSS" in the list of synonyms of both S. divaricata and L. seseloides, which also contributes a great deal to the confusion of these two genera. Obviously, in both these instances there should be added: "pro parte".

Having at my disposal the type specimens, I give here (Fig. 2) the diagrams of the mature mericarps of five species belonging to the four different genera that in some way or other were included in the list of synonyms of the genera in question. These species are: (A) Trinia leigona (CAM) Fedsch., (B) Rumia crithmifolia, (C) L. seseloides, (D) L. multiflora and (E) S. divaricata.

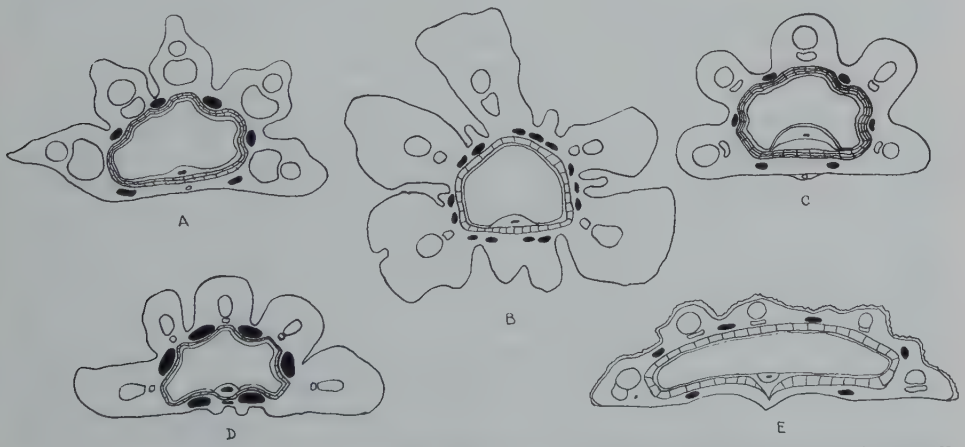

Fig. 2. Transactions of mericarps: A. Trinia leiogona; B. Rumia crithmifolia; C. Ledebouriella seseloides; D. L. multiflora; E. Saposhnikovia divaricata.

Even Ledebour distinguished the morphological fruit-characters of these four genera and described them as follows: Rumia: "fructibus subglobosis, jugis undulatis plicato-rugosis" (p. 280); Trinia*: "fructus oblongo et subgloboso-ellipsoideus, jugis acutiusculis laevibus" (p. 281); Ledebouriella**: "fructibus oblongis jugis tuberculato-nodulosis (p. 281); Saposhnikovia***: "fructus a dorso compressus, jugis parum prominentibus tuberculatis muricibus setisque nullis (p. 332); and further:

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* Trinia = R. leigona sensu Ledebour.
** Ledebouriella = R. seseloides and R. multiflora sensu Ledebour.
*** Saposhnikovia = Stenocoelium divaricatum sensu Ledebour.

"Juga fructum, quos immaturos tantum vidi, multo minus prominent, quam in Stenocoelium athamatoide".

Of all these genera Rumia and Ledebouriella have the greatest similarity in their anatomical structure, differing from the other two genera by the loose thin-walled parenchyma of the mesocarps in the ribs and by the poor development of vascular bundles and of the bundle sclerenchyma. In contrast, the genus Trinia is characterized by a large vascular bundle with a well developed mechanical tissue in each rib. As for the genus Saposhnikovia, as well as the mericarps being of the peucedanoid type rather considerably flattened on their dorsal side, their internal structure has such conspicuous features as the thickened outer exocarp wall, the absence of the loose spongy parenchyma in the mesocarp of but slightly protuding dorsal ribs with somewhat sharp edges, as well as the large cells of distinctly pronounced thin-walled endocarp.

As will be noted by the reader, the diagrams demonstrate the differences not only in the external but also in the internal structure of the fruits of these genera; this is a sufficiently reliable criterion for recognizing the latter as separate genera.

It should be pointed out, however, that intergeneric differences between the ovaries on the one hand, and, on the other hand, between the fruits of the genera Rumia, Ledebouriella and Saposhnikovia, are hardly discernible at the early stages of their development, the surface of all of them being covered with squamulose emergences*.

Nevertheless, it can be seen upon more thorough examination that in Saposhnikovia these emergences are concentrated mainly along the slanting sides of the ribs and along the valleculae of the fruit, while in Rumia and Ledebouriella they are distributed mainly along the crests of the ribs; in Saposhnikovia they gradually disappear, so that valleculae become almost flat, while in the latter two species they develop into whimsically shaped protrusions of the ribs.

In the anatomical structure of its fruits the genus Saposhnikovia is thus more similar to Peucedanum, in particular to P. alsaticum L. It should be emphasised, however, that all these four genera and also P. alsaticum have an important common character by which this group of genera can be distinguished from all the other represenfatives of the Apiaceae family. This character is the large secretory cavities inside the ribs, probably of lysigenous origin, devoid of epithelium and filled with a glossy, lemon-yellow, more or less solid substance that, unlike the schizogenous vittae valleculares, is not stained by Sudan III.

The genus Saposhnikovia differs from the genus Ledebouriella not only by its structural characters, but also by its monoecious bisexual or polygamous flowers.

Each of the four genera has its own geographical distribution. Only one of them, viz. Trinia, which includes numerous species, has a distribution area extending from Western Europe to Western Siberia via Crimea, Caucasus and Middle Asia. Rumia is endemic to the Crimea; Ledebouriella seseloides is confined to Western Siberia, while the distribution area of Saposhnikovia extends from Dahuria southward and eastward, includes Mongolia, Manchuria, the Soviet Far East, a part of China and Korea. The drawing of the cross-section of the mericarp in Hiroë's book "Umbelliferae of Asia" (pl. 37 *a* and *b*) as well as the drawing of Kitagawa (1937 p. 811) by the way, a much more accurate one, should be regarded as pertaining to the genus Saposhnikovia not to Ledebouriella. The same holds true with respect to the drawing of the habit of the plant made by Koso-Poljansky. (1920, pl. 4).

We have thus arrived at the conclusion that the new combination proposed by Hiroë in his above mentioned book is by no means justified. The generic name

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* On the table V of the volume 17 of the "Flora URSS" the fruit of S. divaricata is shown at the earliest stage of its development; therefore, this drawing may mislead the reader.

Saposhnikovia cannot be considered to be a synonym of *Ledebouriella:* Saposhnikovia remains a monotypic genus, perfectly distinct from the other genera closely allied to Ledebouriella; this genus, as far as we know at present, comprises a single species, *S. divaricata.*

The writer is grateful to Dr. W. Domke (Berlin-Dahlem) for sending photographs of type-specimens.

References

Hiroë, M. 1958. Umbelliferae of Asia (excl. Japonia). No. 1. Kyoto.
Hoffmann, G. 1814-16. Genera Umbelliferarum. Mosque.
Kitagawa, M. 1937. Bot. Mag. Tokyo. 51(607-610): 811.
——. 1960. Synoptical Review of Umbelliferae from Japan, Korea and Manchuria. Bull. Nat. Sci. Mus. 5(1, 46): 22.
Koso-Poljansky, B. 1915. Bull. Soc. Nat. S. 29: 133.
——. 1920. Acta Horti Petrop. vol. 36.
Ledebour, C. 1829. Flora altaica. 2: 280, 281, 330.
——. 1829. Icon. Florae Rossicae. 1: *t. 8.*
——. 1844-46. Fl. Ross. 2: 281.
Schischkin, B. 1951. Flora URSS. 16: 363. 17: 17.
Tamamschian, S. 1951. Not. Syst. Crit. vol. 14.
Wolff, H. 1910. Umbelliferae-Apioideae, (in Engler Das Pflanzenreich, 43. H., IV, 228).

SCAEVOLA SERICEA Vahl *versus* S. TACCADA (Gaertn.) Roxb.

F. R. Fosberg (Falls Church, Va.)

In an exhaustive discussion (Taxon 9: 200—208. 1960) Prof. Harold St. John has considered the question of the specific name of the Indo-Pacific strand *Scaevola*, which I thought had been settled (Fosberg and Sachet, Taxon 5: 7—10. 1956) to the satisfaction of everyone as *Scaevola sericea* Vahl (1790).

After two and a half pages of amplification of what was already clear in our paper, and with which St. John agrees, he comes to the point with which he takes issue — our regarding *Scaevola taccada* Roxb. (1814) as a newly published name based on a pre-Linnean description by Rheede and considering *Scaevola taccada* (Gaertn.) Roxb. (1824) (incorrectly cited as 1820 in our account) as a later homonym of it, even though it applies clearly to the same species. St. John thinks that the correct name and author citation are *Scaevola taccada* (Gaertn.) Roxb. (1814), although he correctly quotes Roxburgh's 1814 publication which shows no trace of any reference to Gaertner.

According to him, the issue is whether or not Roxburgh's intention in his 1814 publication can be determined from his later publication dated 1824. In the later publication Roxburgh definitely refers to *Lobelia taccada* Gaertner (1788) which must therefore be regarded as the basionym of this second *Scaevola taccada.* St. John argues for "leniency" in interpreting older works and rather irrelevantly mentions one or two customary "lenient" usages that are specifically countenanced by the Code, and suggests on this basis the admission of *Scaevola taccada* (Gaertn.) Roxb. even though this transfer was not made until ten years after the publication of *S. taccada* Roxb. He admits that whether or not the basionym for a transfer may be supplied subsequently to the original publication is a moot question. I am rather inclined to the opinion that if this question is admitted to be moot, we will have many more names of uncertain status than we are aware of now.

If the above were the only issue involved it would be easy to maintain simply that our original opinion was correct and go on using *Scaevola sericea* by taking the other side of this admittedly moot question. However, St. John complicates the matter by creating another moot situation. Gaertner based his *Lobelia taccada* on a number of elements, principally a specimen, a fruit which he illustrated, but also several literature citations, including Rheede's *Bela Modagam* which was described and illustrated in the Hortus Malabaricus (1673). After ascertaining that the fruit specimen which Gaertner illustrated can no longer be located in the herbarium at Leiden, St. John, in order to make it more difficult to reject *Scaevola taccada* (Gaertn.) Roxb., designates Rheede's *Bela Modagam* as lectotype of Gaertner's *Lobelia taccada*. By doing this he attempts to take advantage of the wording of the homonym rule which defines homonyms as identical names based on different types. Hence, if we disagree with St. John on the admittedly moot question of whether the basionym of a transfer can be supplied in a later publication, we are to be faced with the equally moot question of whether or not we may use a later name which is identical with an earlier one even though not a homonym by definition. One wonders if this constitutes progress toward either stability or orderliness in nomenclature.

In the 1956 paper we applied the Code as rigorously as our understanding permitted and came out with a tenable and unequivocal name, *Scaevola sericea* Vahl, which I have used in annotating hundreds of specimens and in a number of publications. It has also been taken up and used in publications by a number of others. The only imaginable doubt about it rested on a point which is moot at best, as the Code is currently written — that brought out above that *Scaevola taccada* Roxb. might be ascribed to Gaertner by later reference. This, in itself, was not adequate justification for taking up yet another name for this much belabored plant. That the confusion should have been compounded by deliberate designation of a lectotype that would fix an unfamiliar usage is hard to understand on the basis of the ordinary motives for nomenclatural work. It is this sort of mischievous action that tends to provide substance for the non-taxonomists' suspicions as to the motivations behind nomenclatural research.

However, it is perhaps not necessary to accept this unfortunate name change as a *fait accompli* as I at first thought. Article 7 Note 3 of the Code says "when the holotype is lost or destroyed, a substitute may be chosen, unless its name must already be rejected under this code." Clearly this provision is intended to prevent the use of lectotype designation to resurrect, by change of typification, names that are already dead and thereby cause needless changes. It may be correctly argued that the epithet *taccada*, as long as it remained under *Lobelia*, was not to be rejected. However, this typification by St. John was proposed to save the epithet for use under *Scaevola*, where it must already be rejected, according to my interpretation, as a later homonym. Therefore it is at least a moot question whether a lectotype may be designated under Art. 7. If the provision cited above was intended to prevent typification in a way that would cause needless change, then this would seem a proper place to invoke it, thus permitting continued use of *Scaevola sericea* Vahl as the correct name for the common strand plant.

Granting this, then *Scaevola taccada* var. *tuamotuensis* St. John, Taxon 9: 207, 1960, which is certainly varietally distinct, and additionally characterized by its yellowish white flowers, must become *Scaevola sericea* var. *tuamotuensis* (St. John) Fosberg, new combination.

SCAEVOLA MISCONCEPTIONS

Otto Degener (Oahu, Hawaiian Islands) *

Ever wishing to avoid controversy and to concentrate toward producing an Hawaiian Flora, I seldom bother to discuss the works of students of the local flora in botanical journals. But as Taxon is so widely read that St. John's statements in "The Name of the Indo-Pacific Strand Scaevola" appearing in the September 1960 issue may be accepted without question, I herewith add some of my own observations about the genus *Scaevola.*

On a botanical project with the late pathologist H. H. Whetzel, I observed the black-fruited *S. plumieri* (L.) Vahl during the summer of 1920 in Bermuda; while since 1922 I have observed, and since 1935 have lived amidst, the white-fruited *Scaevola* growing native about my beach home on Oahu and elsewhere in the Hawaiian Islands.

In the *Flora Hawaiiensis* of December 1, 1949, dealing with our white-fruited halophyte, Greenwell and I stated that the "purist in matters nomenclatorial .... will find the name *S. frutescens* untenable for the Old World plant. We believe, however, that common usage of this name since Krause's monograph and that Millers reference to the Ceylon species form a sufficiently large loophole to permit us to retain the name *S. frutescens* for our plant at least until friendly studients vociferously disapprove."

On the same day as the above remark, we published *S. frutescens* forma *moomomiana,* endemic to a remarkable area on Molokai to which the endemic *Tetramolopium rockii* Sherff, *Gnaphalium sandwicensium* var. *molokaiense* Degener & Sherff and *Sesbania tomentosa* var. *molokaiensis* Degener & Sherff are likewise restricted. In Pac. Sc. 6: 32—33 (1952) St. John reduced this form to "Scaevola frutescens (Miller) Krause, var. sericea (Forster f.) Merrill." In Phytologia 6: 321 (1958) Degener & Degener revised the name to *S. sericea* Vahl var. *fauriei* forma *moomomiana,* and to this day retain the opinion that this taxon is a valid one in spite of St. John's repeated opinion (Taxon 9: 207. 1960.) that "There seem to be no significant characters for separating this as a forma."

In contrast to the above form, Mrs. Degener and I discovered March 16, 1961, while botanizing with aid of a National Science Foundation grant, about 6 miles from the ocean and above 750 feet elevation at Omoe, Island of Kauai, *S. sericea* var. *fauriei* forma *saintjohnii* Deg. & Deg., *forma nov., foliis glabris.* This novelty, No. 27, 313, is erect, more or less arborescent, 12—27 dm. tall, few-branched and bears 15—25 cm. long and 5—9.5 cm. wide leaves that are conspicuously glabrous on both surfaces excepting toward the base. This is a valid taxon; our beach halophyte, carted as seed with crushed coral fill by the U.S. Army into the lower rainforest for road construction, germinates to produce shrubs essentially as pubescent as are the parents found along the shore.

In 1950—51 I scattered seed of the white-fruited *Scaevola,* gathered about my Oahu home, on Canton Atoll (Degener & Gillaspy, Atoll Res. Bull. 41: 1—50. 1955.). In February 1958 Mrs. Degener and I returned to this equatorial island, enabling us to compare under identical conditions our now matured Oahu introductions with the native taxon. The differences, described elsewhere (Degener & Degener, Atoll

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* Collaborator in Hawaiian Botany, New York Botanical Garden.

Res. Bull. 64: 16—17. 1959.), were so striking that residents of the atoll, without any botanical knowledge, had noticed the difference between the two even before our arrival from Honolulu. These differences prompted our naming the common coastal plant of the Hawaiian Archipelago *S. sericea* var. *fauriei* (Lèvl.) Deg. & Deg. (Phytologia 6: 321. 1958.). Lacking literature and sufficient herbarium material from throughout the Pacific, we felt naming the Canton Atoll plant premature and unwise.

Preferring to give newcomers to the Islands the opportunity to correct for themselves what I consider their hasty errors, I at times express my views ephemerally in the local newspaper or elsewhere. As my comments in the Honolulu Star-Bulletin for July 1, 1933 evoked no reaction, I herewith quote from it. Referring to St. John's Haw. Plant Studies, in Bishop Mus. Occas. Pap. 10(4): 2—10 (1933), I stated that "The paper gives an excellent description of a naupaka found in Kipapa gulch, Oahu. This plant, according to the author, is new to science and is named by him Scaevola Skottsbergii. It is said to be most closely related to a plant growing in west Australia. 'Hawaiian Plant Studies' bids fair to become a welcome addition to the technical botanical literature of Hawaii. The value of the initial number, according to the reviewer and his assistants, is somewhat marred by the fact that Skottsberg's scaevola is not a new kind of plant at all but is actually Menzies' scaevola described by Chamisso exactly 100 years ago. Besides growing in Kipapa gulch, the plant may be found on Oahu easily today by anyone who will take the trouble to walk along Niu ridge and on the plateau above Kaena point. We need not go to Australia to find its nearest relative — that grows near Makaopuhi crater on the island of Hawaii and is known as the Kilauea scaevola." Skottsberg a decade later (Acta Horti Gothob. 15: 504. 1944.) came to a similar conclusion, remarking that "As far as I can see, *S. Skottsbergii* is little more than a variety or form of *S. menziesiana* ....."

St. John (Pac. Sc. 6: 30—32. 1952.) reduces the genus *Camphusia* De Vriese to *Scaevola* L., and raises my *C. glabra* var. *kauaiensis* (Fl. Haw. October 14, 1938.) to *Scaevola kauaiensis* (Degener) St. John. Besides gross morphology, additional evidence for retaining the genus *Camphusia* is found in the pollen studies of Selling (Bishop Mus. Spec. Publ. 38: 322. 1947.) who maintains that the differences in the pollen "seem to add weight to Degener's view (Fl. Haw., Fam. 340, 12/5/1932, and 10/14/1938) that *Camphusia* should be restored." Agreeing with St. John about the specific status of the Kauai plant, Mrs. Degener and I herewith transfer it to its proper genus as *Camphusia kauaiensis* (Deg.) Deg. & Deg.

Though commonly held ideas about the genus *Scaevola* in the Pacific are replete with misconceptions, mutual criticism is stimulating us to a better understanding of these interesting members of the *Goodeniaceae*. We hope that St. John's findings regarding "The Name of the Indo-Pacific Strand Scaevola" will prove to be as simple as he has expressed them.

NEWS AND NOTES

SANDAKAN HERBARIUM

During the night of January 31, 1961 the mounted collections of the Sandakan Herbarium — the Forest Department Herbarium — comprising about 15.000 specimens were destroyed by a fire broken out in a veneer factory which was built during 1960 at 28 ft. distance of this Herbarium. These collections comprised mainly specimens of timbertrees. They were for the family of Borneo timbertrees, the Dipterocarpaceae, as up to date as possible. Duplicates are preserved in Kepong, Singapore, Kew, Leiden and some American Herbaria. Only recent (1960) collections, about 2.500 nos. collections of herbs, ferns and bryophytes and a few (20 species) recently studied collections of timbertrees escaped this fire. No collections on loan were destroyed and no collections made by visitors during 1960.

Though the North Borneo flora can still be studied in the herbaria of Kew and Leiden and as far as concerns Dipterocarps in Sarawak, this fire means a great set-back to any attempt to give this emergent country its own central herbarium where in the future the flora of North Borneo can be studied.

In view of the fact that the timberexport during recent years provided millions of dollars in revenue it is hoped that the North Borneo government will no longer postpone the building of a new modern herbarium and give the necessary funds for a new drive for botanical exploration of this country which is still for 80% covered by virgin jungle.

W. Meijer (Sandakan)

NOTICES OF BOOKS

Contributions to this column will be gratefully received by Dr K. U. Kramer, Botanical Museum, Lange Nieuwstraat 106, Utrecht, Netherlands.

The genus Phlegmacium

M. Moser: Die Gattung *Phlegmacium* (Schleimköpfe). Publ. as vol. IV of the series "Die Pilze Mitteleuropas" by Julius Klinkhardt Verlag, Bad Heilbrunn (Obb., Germany), 1960. (440 pp., 6 plates. An extensive monograph, with notes on taxonomy, ecology, morphology, chemistry, biology, etc., of the group, a systematic synopsis with a key, and an enumeration of the species with descriptions. A french translation of the synopsis and the key is added. A separate folder contains 32 folio colour-plates depicting 190 taxa. Price DM. 172.—).

Drawings of British Plants

S. Ross-Craig: Drawings of British plants. Pat. XVI: *Compositae* (2). Bell & Sons, London, 1961. (33 plates; price ca. 10 s.).

Orchids of Peru

Ch. Schweinfurth: Orchids of Peru, pt. 4 (concl.). Publ. as Fieldiana: Botany vol. 30, no. 4, by the Chicago Nat. Hist. Museum, 1961. (pp. 787-1005, figs. 161-194. Price ?).

The fourth part of this work, which has recently appeared, concludes the first taxonomic enumeration with descriptions of all of the orchids recorded from one of the richest regions of the New World. Moreover, being the pioneer treatise of this aspect of any part of the Andean region — a vast area which properly constitutes one floristic unit — it furnishes a basis for future Andean floras.

The first part (1958) treats among many others the genus *Habenaria, Spiranthes* in its broad sense and the complex groups *Stelis, Masdevallia* and *Lepanthes.* The second part (1959) includes the huge genera *Pleurothallis* and the queen of tropical American orchids, *Epidendrum.* The third part (1960) discusses *Cattleya, Catasetum, Lycaste* and the perplexing *Maxillaria*-complex. The fourth part (1961) treats the remaining genera, including the large horticultural groups *Odontoglossum* and *Oncidium.*

A valuable feature of this work is that every species treated includes the overall measurements and morphology seen throughout the range of that particular plant. Moreover, the carefully considered keys, both to genera and species, contribute to the usefulness of the Flora. Finally many outstanding orchids are illustrated by some of the best flower artists of the day, including Mrs. Oakes Ames, Mr. Gordon W. Dillon, Mr. Elmer Smith and Mrs. Dorothy H. Marsh.

This is truly a monumental work of orchidology and will take its place amongst the great classics.

R. E. Schultes

The Cactaceae

C. Backeberg: Die *Cactaceae*. Bd. V. *Cereoideae* (*Boreocactinae*). Gustav Fischer, Jena, 1961. (pp. 2631-3543, figs. 2507-3243, plates 212-255. Price DM. 113.—).

The tribe Pachycereae

F. Buxbaum: Die Entwicklungslinien der Tribus *Pachycereae* — F. Buxb. (*Cactaceae - Cereoideae*). Publ. as vol. 12 of Botanische Studien, Gustav Fischer Verlag, Jena, 1961. (107 pp., 52 figs., 3 maps; a critical revision of the genera with extensive notes on morphology. Price DM. 15.50).

The genus Monadenium

P. O. Bally: The genus *Monadenium*, with descriptions of 21 new species, 32 plates in natural size and 88 figures. Benteli Publishers, Berne, Switzerland, 1961. (111 pp., 5 maps; the plates nearly all in full colour. With key and descriptions, illustrations and distribution maps for all species. Price ca. Sfr. 34.—).

The genus Dionysia

P. Wendelbo: Studies in Primulaceae. I. A monograph of the genus *Dionysia*. Publ. as Årbok for Univ. i Bergen, Mat. Naturv. Serie no. 3, 1961. (83 pp., 17 figs., 2 plates, 6 maps.).

Flora of New Zealand

H. H. Allan: Flora of New Zealand. Vol. I. R. E. Owen, Government Printer, Wellington, N.Z., 1961. (liv + 1085 pp., 40 figs., 4 maps. Deals with vascular cryptogams, gymnosperms, and dicotyledons. With bibliography, notes on phytogeography and environment, list of authors, keys and descriptions, notes on distribution of species, and indication of type specimens. Price £ 5.5.0).

Polypodiaceae and Grammitidaceae of Argentina

E. R. de la Sota: *Polypodiaceae* y *Gramitidaceae* argentinas. Publ. as Opera Lilloana vol. V by Universidad Nacional de Tucumán, Argentina, 1960. (229 pp., 38 figs.; with notes on taxonomy, morphology and distribution, keys and descriptions).

Flora of New South Wales

Flora of New South Wales, by various botanists, produced under the direction of R. H. Anderson. Introduction and conspectus of families; 1. *Zamiaceae* — 18. *Hydrocharitaceae*, by L. A. S. Johnson and J. Thompson, respectively. Publ. as Contrib. from the N.S. Wales Nat. Herbarium, Flora Series, nos. 1-18, Sydney, 1961. 101. *Papilionaceae*, pp. I, by J. Thompson. Ibid., no. 101, pt. I, Sydney, 1961. (88 pp., 1 map; 91 pp. With keys, descriptions, and citations of specimens).

Diatoms of the Netherlands

A. van der Werf & H. Huls: Diatomeeënflora van Nederland. Vol. 5. Abcoude, Netherlands, 1961. (53 plates; contains also some notes on the taxonomy of the group. Price Dfl. 4.80).

Flora of Paraná

J. Angely: Flora do Paraná. No. 17. Archembryogamas. Curitiba, Paraná, 1961. (47 pp.; contains a list of the flowering plants recorded from the state). No. 18. Pteridophytos Paranaenses. Curitiba, Paraná, 1961. (7 pp.; a list of vascular cryptogams). 20. Flora Bryologica do Paraná. Curitiba, Paraná, 1961. (7 pp.; a list of *Bryales* known from Paraná).

* * *

New Periodicals

Kurtziana, published by the Museo Botánico, Facultad de Ciencias Fisicas y Naturales, Cordoba, Argentina. (Contains articles and short notes on plant taxonomy and morphology. Vol. I was published in April 1961).

Acta Palaeobotanica, publ. by the Botanical Institute of the Polish Academy of Sciences, Kraków, ed. by W. Szafer. (Vol. I no. 1 was published in 1960).

* * *

Flore du Cambodge, du Laos et du Vietnam

Directeur: Prof. A. Aubréville; rédacteur principal: Mme M. L. Tardieu-Blot. Fasc. I. Sabiacées, par † F. Gagnepain et J. Vidal, 1960, 59 p., 9 pl., fig. 8 NF. fr. Laboratoire de Phanérogamie du Muséum, 16 rue Buffon, Paris 5°.

Cet ouvrage est la continuation sous un nouveau titre du "Supplément à la Flore générale de l'Indochine" de H. Lecomte. Les familles sont en principe révisées entièrement, et publiées au fur et à mesure qu'elles sont prêtes, sans suivre l'ordre systématique. La nouvelle flore diffère de l'ancienne par la présence de données écologiques, de notes critiques sur la taxonomie, des noms locaux et des usages.

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L'A.E.T.F.A.T.-Index 1960 est sorti de presse. Conçu de la même façon que les précédents, il contient tout ce qui a paru durant l'année 1960 concernant la botanique systématique africaine et malgache prise au sens large.

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SOME PROBLEMS OF REGULATING BOTANICAL TERMINOLOGY

M. E. Kirpicznikov (Leningrad)*

A thoroughly elaborated terminology is very important for the progress of descriptive Botany. The great genius, C. Linnaeus, who fully realized the role of terminology in the development of plant taxonomy and of botany in general, contributed to the elaboration of terminology more than all his precursors (Linnaeus, 1751).

However, the rapid progress of science, as well as the disagreement of several authors with many of the definitions proposed by Linnaeus, gave rise to an ever increasing number of new concepts and terms. By the thirties of the last century, when Bischoff published his well-known reference-book (Bischoff, 1833—1844) and the "Wörterbuch" (Bischoff, 1839) there were already scores of new, postlinnaean, terms in Botany.

All these terms urgently required explanation and, not infrequently, comparison with previously existing terms for corresponding concepts; a great many synonymous terms had also accumulated by this time. In the meantime a number of terms had lost their original distinct delimitation, had become diffuse, and had acquired various ambiguous nuances.

It was for all these reasons that Alphonse De Candolle, the author of the famous "La Phytographie ....." (De Candolle, 1880) was compelled to introduce into his book a special chapter devoted to the relative difficulties of botanical terminology in which he discussed the terms the meaning of which varied widely.

The first half of the XXth century was characterized by the appearance of a great multitude of new terms. No modern dictionary is able to keep pace with this rapidly increasing number of terms.

Owing to certain circumstances some hitherto clear and definite terms have become thoroughly diffuse and obscure.

Apparently, the most important of these circumstances are the following:

1) A tendency to disregard the authorities of the past and their classical works devoted to terminology that really ought to have remained the basis for descriptive

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4 DEC 1961

Taxonomy up to the present time. Such, in the first place, are the works of Linnaeus, then those of De Candolle and Bischoff.

2) The unreasonable application of many old terms involving the attribution of a new, different, sense, with the result that a great number of terms now have two, three, or more different meanings.

3) The unjustified subjectivism, as well as the lack of "rigid discipline" on the part of many authors in the interpretation and, even more, in the practical application of different terms.

Whatever the reason, to an unbiassed observer taxonomic terminology is at present a rather unattractive and, in many respects, obscure sight. The terms for the description of the apex and, particularly, of leaves, are an excellent illustration of this; despite their apparent simplicity, their generally adopted and frequent use, and their important significance (in particular, for the description of leaves), nevertheless "It may therefore occasion some surprise that present and past usage of some of these terms has been neither precise nor uniform." (Rickett, 1956, p. 342).

The ample material accumulated and cogently presented by Rickett imbues one with a disappointing conviction that the taxonomists by no means always understand identically the same term relating to shape, even when the description was made in the same language and based on the same plant form.

There are also many other facts pointing to the urgent necessity for some prompt and energetic measures to be taken for bringing terminology into order, and it is a duty of all botanists, vitally concerned for the development of their branch of science, to take an active part in this work.

A continued inertness in this respect would lead us to chaos, whilst the appearance of a new Linnaeus is hardly to be expected.

The regulation of terminology is, therefore, an urgent task for a large collective body of modern plant taxonomists.

*

It is, naturally, much easier to raise a problem than to solve it; of course the difficulties to be overcome in the course of solving it should not be underestimated, but it is still more dangerous to exaggerate them. It may be taken for granted that there are some persons who are apt to predict a "complete failure" of any efforts to establish good order in terminology. Such sceptics, however, are unlikely to affect seriously the successful course of the regulation of terminology.

It seems that the most efficient method in which to regulate the terminology of descriptive plant taxonomy would be to subdivide the whole problem into separate relatively small groups of minor problems.

We shall dwell here only on the most important of these groups.

I. *The group of terminological problems that might be successfully solved during the next few years* and the regulations elaborated as the result of their solution prepared, submitted for consideration, examined and approved for general introduction during the period between the IXth and XIth International Botanical Congresses.

Such are, for example:

1. *The terms relating to the shape of the leaf (the leaf blade) as a whole, its base, apex and margins.* This problem is thoroughly considered in the valuable works of Rickett (1954—1956).

A system of transparent models (standard contours) is probably destined to play an important role in the standardization of the terms relating to the leaf.

The models elaborated by the author in co-öperation with his colleagues (Федоров, Кирпичников и Артюшенко, 1956) for the main forms of the leaf blade might serve as a prototype for such a system; after some technical improvements (thus, a single contour drawn on tracing-paper should be replaced by several concentric contours on a thin transparent sheet of celluloid etc.) such models might greatly facilitate research work in many different branches of botany (not only in plant taxonomy!) and contribute a great deal to the standardization and unification of concepts. It appears to us that all the technical preparation required for the elaboration of proposals for unified terms related to leaf form, for their approval and subsequent general adoption by the botanists of the world, might be successfully completed in three or four years.

2. *The terms designating the main types of pubescence and its constituent elements (the hairs).* This problem is also already worked up to a great extent. So far as the material for the standards is concerned, it might be obtained mainly from the leaves and also from the stems of widespread (or sufficiently readily available) plants. For example, the upper surface of the leaf of *Anthurium magnificum* might serve as the standard for velutinous pubescence; the hairs on the surface of the leaves of *Leontodon asperimus* might be the standard for one of the forms of anchor-shaped hairs. Not only the standards, but also the appropriate models, schemes, diagrams, drawings, photographs and texts might contribute to the unification of the terms in this field. (The latter statement, by the way, holds true for all the divisions of the new unified international system of botanical terminology). The elaboration of the terms for the types of pubescence and for its constituent elements could probably be successfully completed in three or four years.

3. *The terms designating the colour hues.*

Some colour scales, already well elaborated by biologists, such as, for instance, the thoroughly prepared Horticultural Colour Chart (London 1938—1941) prepared for publication in co-öperation with the Royal Horticultural Society might be used for the elaboration of the unified terminology relating to the colour. The technical solution of the problem of a unified colour scale would probably require about five years.

Several other problems might be mentioned that are sufficiently worked up for final decisions to be taken during the next 5—10 years, and the uniform usage of a great number of terms could thus be achieved. A rigid system of standards and term-equivalents in different languages might be established with respect to these terms (as has already been done with the terms for the anatomy of wood).

If the unification of terms be accomplished consistently, by stages (one group of terms after another), but in a sufficiently energetic tempo, a considerable success in the standardization of terminology might be attained in a relatively short time.

II. *The group of terminological problems the solution of which requires a relatively long time (10—15 years).*

In our opinion, one of the most important of such problems is the compilation of a complete glossary of the terms in descriptive Botany embracing the period from 1751 until 1960.

With the proper co-öperation of the botanists of different countries such a glossary might be completed by 1970 or thereabouts.

The dictionaries that have already been published (e.g. Bischoff 1839, Петунников 1912, Jackson 1949, Pont y Quer 1953, Эабинкова и Кирпичников 1957 and some other dictionaries) might serve as a solid basis for this glossary, as well as the special essays of the type of the abovementioned works of Rickett, but carried out in greater detail on the basis of the sources of a single country.

III. *The group of problems relating to the regulation of terminology that are expected to arise in future.*

Among the tasks that will need to be carried out in the future, the following three must be mentioned in the first place:

1. To induce botanists to abstain from the invention of new terms except in the cases of utmost necessity.

2. To instill into specialists a sense of their very great responsibility that any proposed new term should be correct from the philological standpoint, delimited perfectly distinctly and, if possible, supplied with some kind of a standard.

3. To provide for all the botanists of the world some comparatively rapid and convenient method of information on the publication of new terms.

Literature

Забинкова Н. Н. и М. Э. Кирпичников. (1957). Латинско-русский словарь для ботаников. В кн.: Справочное пособие по систематике высших растений, II. Под общей ред. Б. К. Шишкина. (Lexicon latino-rossicum pro botanicis. In: Vademecum methodi systematis plantarum vascularium redactore B. Schischkin, fasc. II). Изд. АН СССР, М.—Л. : 1 — 336.— Петунников А. Н. (1912). Свод ботанических терминов, встречающихся в русской ботанической литературе. Изд. 2-е. Юрьев : 1—161. (Тр. Бюро по прикладной ботанике, Приложение 6). — Федоров Ал. А., М. Э. Кирпичников и З. Т. Артюшенко. (1956). Атлас по описательной морфологии высших растений. Лист. (Organographia illustrata plantarum vascularium. Folium.). Изд. АН СССР, М.—Л. : 1—304. Приложение: Шаблоны для определения основных форм пластинки листа. — Bischoff G. W. (1830—1833). Handbuch der botanischen Terminologie und Systemkunde, *I*. Nürnberg : XII+581+44, 47 Taf. — Bischoff G. W. (1839). Wörterbuch der beschreibenden Botanik. Stuttgart : 1—284. — Candolle Alphonse de. (1880). La Phytographiae. . . Paris : XXIV+484. — Font y Quer Pio. (1953). Diccionario de botánica. Barcelona: XL+1244. — Horticultural colour chart. (1938—1941). Issued by the British colour council in collaboration with the Royal Horticultural Society. London, *I* : 8, 100 color. tab. (1938); *II* : 8, 100 color. tab. (1941). — Jackson B. D. (1949). A glossary of botanic terms. . . 4th ed. London : XII+481. — Linnaeus C. (1751). Philosophia botanica. . . Stockholmiae : 1—362, 9 tab. — Rickett H. W. (1954a). Materials for a dictionary of botanical terms. I. Bull. Torr. Bot. Club, *81*, 1 : 1—15. — Rickett H. W. (1954b). Materials for a dictionary of botanical terms. II. Bull. Torr. Bot. Club, *81*, 3 : 188—198. — Rickett H. W. (1955). Materials for a dictionary of botanical terms. III. Inflorescences. Bull. Torr. Bot. Club, *82*, 6 : 419—445. — Rickett H. W. (1956). Materials for a dictionary of botanical terms. IV. Terms to describe apices. Bull. Torr. Bot. Club, *83*, 5 : 342—354.

TUCKEY'S „NARRATIVE OF AN EXPEDITION TO EXPLORE THE RIVER ZAIRE" AND THE NOMENCLATURE OF IPOMOEA PES-CAPRAE

William T. Stearn (London)

In 1816 the British Government fitted out an expedition under the command of Captain James Kingston Tuckey R.N. (1776—1816) to try to solve the problem of the Congo river, which geographers thought might be the outlet of the Niger, then known only as a great river far in the interior of tropical West Africa. Its two ships, the *Congo* and the *Dorothy*, carried 58 persons, among them the Norwegian botanist Christen Smith (1785—1816) and his assistant, David Lockhart (d. 1846), a Kew gardener, later superintendent of the Trinidad botanic garden. It was well equipped and manned, yet, as stated in the official narrative, never before 'were the results of an expedition more melancholy and disastrous'. Within a few months of being in the Congo river, twenty-one members of the expedition died from tropical diseases and exhausting conditions, among them being Tuckey and Smith. Fortunately Lockhart survived and was able to help Robert Brown with information about many plants contained in the herbarium of Congo plants made by him and Smith. Brown's 'Observations, systematical and geographical, on Professor Christian Smith's collection of plants from the vicinity of the river Congo' is not a descriptive enumeration of the genera and species, roughly 600, but an essay on 'whatever appears most remarkable in the several Natural Orders of which the collection consists', it also includes 'a general comparison of the vegetation on the line of the river Congo, with that of other equinoctial countries', which is a pioneer contribution to plant geography. As appendix V it occupies pages 420—485 of the *Narrative of an Expedition to explore the River Zaire, usually called the Congo, in South Africa, in 1816, under the Direction of Captain J. K. Tuckey, R. N., to which is added, the Journal of Professor Smith* (London; 1818); it is reprinted in *The miscellaneous botanical Works of Robert Brown* **2**: 97—173 (1866). A separate edition entitled *Observations, systematical and geographical, on the Herbarium collected by Professor Christian Smith* was presented by Robert Brown to the Linnean Society of London on 3 March 1818. Peddie and Waddington, *English Catalogue of Books 1801—1836*, 602 (1914) give March 1818 as the date of publication of Tuckey's posthumous *Narrative*. The publisher John Murray presented it to the Royal Society of London on 5 March 1818 (cf. *Phil. Trans.* 1818: 524). William Bent's *Monthly Literary Advertiser* no. 155; 17 (10 March 1818) listed it as a new publication. Through an error of transcription, by which it is hoped no-one will be misled, the date was unfortunately given as 'Mar 1819' in *Taxon* **10**: 145 (1961).

Acceptance of March 1818 as the date of publication of Tuckey's *Narrative* and Brown's *Observations* leads to the conclusion that the scientific name of the strand bindwind found on sandy shores throughout the tropics should be cited as *Ipomoea pes-caprae* (L.) R. Br. Linnaeus in 1753 (*Species Plantarum* **1**: 159) distinguished two species which Brown was the first to unite, *Convolvulus pes-caprae* L. of Ceylon and southern India with deeply bilobed leaves (for which Linnaeus cited Rheede, *Hortus Ind. Malab.* 11: t. 57 as an illustration) and *Convolvulus brasiliensis* L., of tropical America with emarginate leaves (for which Linnaeus cited Plumier, *Descr. Pl. Amer.* t. 104). Though generally accepted as conspecific they are not identical and van Ooststroom has distinguished them as *I. pes-caprae* subsp. *pes-caprae* and *I. pes-caprae* subsp. *brasiliensis*, the first apparently restricted to the coasts of

Sumatra, Ceylon, continental tropical Asia, and Somaliland, the second likewise maritime but almost pantropical. Brown's entry (Tuckey, *Narr.* 477) is as follows:

Ipomoea pes caprae *Nob.*

Convolvulus pes caprae L. } ead. sp.
— brasiliensis L. }

Robert Sweet also transferred these Linnaean species to *Ipomoea*, in his *Hortus suburbanus Londinensis* 35 (London; 1818), which has the following entries under *Ipomoea*:

43 Pes-caprae. thick-leaved .... Rheed. mal. 11. t. 52

43 brasiliensis. Brazilian .... Plum. ame. 89. t. 104

It has hitherto been uncertain which has priority, Brown's appendix or Sweet's *Hortus*, and many authors have attributed the combination *I. pes-caprae* to the latter, although in publications of the British Museum (Natural History), e.g. Exell's *Catalogue of the vascular Plants of S. Tomé* 251 (1944) it has been cited from Brown's appendix. Sweet's addenda on pp. 230—232 contain references, to *Bot. Mag.* tt. 1978, 1980 (April 1818), t. 1984 May (1818) and *Bot. Reg.* tt. 280, 283 (May 1818), t. 285 (June 1818) and hence cannot have been published before late June 1818, but it was evidently on sale in July 1818, as it is listed in *Journal général de la Litérature étrangère* 1818: 227 (Aug. 1818).

The combination *Ipomoea brasiliensis* was also published independently in G. F. W. Meyer's *Primitiae Florae Essequeboensis* 97 (Göttingen; 1818). Meyer's preface is dated 'Gottingae, ex museo meo, mense Septembri MDCCCXVIII' and in a letter of 10 November 1818 to T. F. Foster (cf. *Bull. Jardin Bot. Bruxelles* **27**: 247; 1957) he mentioned 'my Primitiae florae Essequeboensis just published now'. The Royal Society of London received a copy from him on 17 December 1818 (cf. *Phil. Trans.* 1819: 511). It is listed in *Journal géneral de la Litérature étrangere* 1818: 355 (December 1818). Hence November 1818 can be accepted as its month of publication. The *Index Kewensis* 1: 1226 (1893) attributes the combination *I. pes-caprae* to Roth's later *Novae Plantarum Species* 109 (Halberstadt; 1820 or '21). Roth's treatment of the matter agrees with Brown's. Like Brown earlier, he reached the conclusion that 'inter *Convolvulum Pedem Caprae* et *brasiliensen* Linnei certe limites inveniri nequeunt' and he likewise adopted the epithet *pes-caprae* when uniting them under *Ipomoea*.

The bibliographical situation can be summarized as follows:

Ipomoea pes-caprae (L.) R. Br. in Tuckey, Narr. Exped. Zaire 477 (March 1818); Sweet, Hort. Sub. Lond. 35 (July 1818); Roth, Nov. Pl. Sp. 109 (1820 or '21); Ooststroom in Blumea **3**: 532 (1940).

Convolvulus pes caprae L., Sp. Pl. **1**: 159 (1753).

Convolvulus brasiliensis L., Sp. Pl. **1**: 159 (1753).

Ipomoea biloba Forsk., Fl. Aeg.-Arab. 44 (1775).

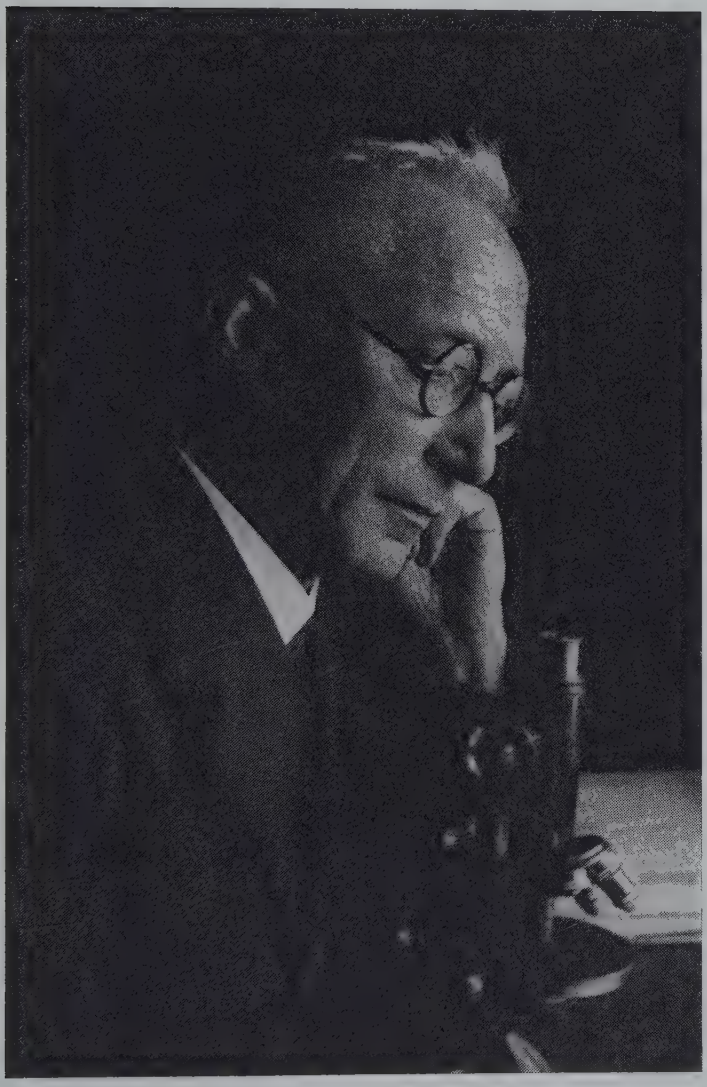
Ipomoea brasiliensis (L.) Sweet, Hort. Sub. Lond. 35 (July 1818); G. F. W. Meyer, Prim. Fl. Esseq. 97 (Nov. 1818).

Fuller synonymy will be found in van Ooststroom's paper on the Convolvulaceae of Malaya in *Blumea* **3**: 532—539 (1940).

FRANZ ELFRIED WIMMER

1881-1961

K. H. Rechinger (Wien)



F. E. Wimmer, well known for his Monograph of Campanulaceae-Lobelioideae published in "Das Pflanzenreich" IV. 276 b, 1943/1953, passed away in Vienna on May, 2nd, 1961 after several years of severe illness and after having undergone several operations. F. E. Wimmer, the son of a farmer, was born in Niederschrems, Niederösterreich. He studied Catholic Theology and, at the same time, Natural History at the Universities of Vienna and Graz, and was ordained priest in 1907.

In 1905 he went to Constantinople, now Istanbul, and for many years he was a professor in Natural History at St. George's College. He collected a representative set of plants in the Istanbul area which served together with Nemetz's collections and Aznavour's numerous contributions as a basis for the "Enumeratio Florae Constantinopolitanae" published by the writer of this notice in Fedde's Repertorium spec. nov. reg. veg. Beihefte vol. 98. After World War I, Wimmer settled down in Vienna, serving as a priest at different places in and around Vienna until his retirement in 1958. In his spare time he became an unofficial research associate at the Botany Department of the Vienna Natural History Museum and finally received the award of being made a Correspondent of the Museum. The late A. Zahlbruckner aroused his interest in the Campanulaceae-Lobelioideae. Wimmer published numerous papers on this large and taxonomically difficult group. In 1943 the first volume of his monograph was published. The larger part of the stock however was destroyed by war action and the book had to be reprinted in 1950. In 1953 the second volume was issued and a few months before his death a manuscript for an important supplement had been delivered to the editors. Wimmer also contributed treatments of the Campanulaceae-Lobelioideae to several floras, e.g. to those of Peru, Hawaii, and Madagascar. In the meanwhile Wimmer had started monographing the tribe Cyphioideae. It is hoped that this manuscript can be prepared for publication. In addition to his widely known studies in Campanulaceae, Wimmer was keenly interested in medical plants. He arranged an instructive exhibition of Austrian Medical Plants which was displayed at the Natural History Museum from 1934 to 1938.

Wimmer was of an extremely kind disposition, quiet and rather reticent. In order to continue his research work he was prepared to face almost every hardship; neither the intense cold of the unheated herbarium rooms nor the 144 steps up to the herbarium (before heating and an elevator were installed) could prevent him from his studies. Even his prolonged severe illness could not interrupt his work for longer than the days he was actually in bed.

An obituary and a list of his publications will be published in Annalen des Naturhistorischen Museums in Wien.

OUR CORPUS AND CARRPOS - A REPLY

A. A. Bullock (Kew)

Dr. Proskauer's note on the orthography of generic names (Taxon 10: 155—156. 1961) points the necessity for clarification at several places in the Code. I have here taken up an interpretation opposed to that of Dr. Proskauer, but this has no personal bias whatever, and I shall be glad to see the question unequivocally settled either way.

Some considerations in regard to generic names often have been overlooked or not given their full weight. The first, obviously accepted also by Dr. Proskauer, is the arbitrary nature of generic names. Even if the derivation and meaning of a name are either given by the author or evident from the context, the orthography remains arbitrary and subject to the whim or scholarship of the author. Art. 20 is unequivocal, ". . . . It may be taken from any source whatever, and may even be composed in an absolutely arbitrary manner." Art. 73 gives permission to correct [proven] typographic or orthographic errors, and requires certain conventional corrections

whilst insisting that "The original spelling* of a name or epithet must be retained ...." It is implicit that in order to constitute an error, a particular orthography must be unintentional on the part of the author or of the printer. Another consideration in this context is the weight to be given to different orthographies of generic names when they refer on the one hand to the same genus [*i.e.*, the same nomenclatural type] and on the other hand to different genera [*i.e.*, different nomenclatural types]. It is to this second point that, in my opinion, Dr. Proskauer has not given due weight, and has in fact treated the two cases as of equal significance.

In the former case, later orthographic variants must be regarded as orthographic errors and must be discarded unless the original spelling is itself shown to be either a typographic or an unintentional orthographic error; such later variants cannot be regarded as superfluous new names. In the latter case, different orthographies may very well (and frequently do) represent different names; whether or not they are to be regarded as homonyms requires a judgement on the merits of each name in the light of Art. 75. On the basis of the examples quoted in the Code, below and by Dr. Proskauer, *Monocarpia* Miquel and *Monocarpus* Carr are certainly different names under Art. 75 and are not homonyms, whilst under Art. 73 "*Monocarpus* Post et Kuntze" is a mere error for *Monocarpia* Miquel.

It has been pointed out many times that the Code is equivocal in regard to the kind of orthographic variance which leads to homonymy. Thus *Peponia* and *Peponium*, differing only in gender, are to be regarded as different names although they have the same root, and by analogy one assumes that *Adenia* and *Adenium*, having different roots, are also to be regarded as different names. These two pairs of names, however, refer to pairs of different genera; it is in fact the taxonomic difference between them that allows their acceptance as different names by the Code. Taxonomic difference permits also the retention of both *Rubus* and *Rubia*. Other similar pairs are regarded as homonymous owing to either taxonomic affinity, community of origin, or for other reasons, in a quite arbitrary manner.

The situation is quite different when similarly different orthographies produce names referring to the same genus (i.e. names having the same type). Thus the genus described as *Lepistemon* Blume (1825) was adopted by Hasskarl in 1844, but he used the spelling "*Lepidostemon*", the "correction" being on the ground that *Lepistemon* was wrongly formed. In such circumstances the correction was unwarranted and is in fact forbidden explicitly by the Code. "*Lepidostemon*" Hasskarl was not a new name; it was merely an orthographic error for the arbitrarily formed *Lepistemon*, and Hasskarl attributed it without comment to Blume. The fact that it was an intentional error, as compared with the unintentional error (such as "*Woodia*" written in error by R. Brown for the intended "*Woodsia*") explicitly mentioned in the Code, is highly relevant.

Similarly, the correction of *Monocarpia* Miquel by Post and Kuntze to "*Monocarpus*" was not permissible, but this does not make *Monocarpus* a new and superfluous name. It is clear from the text of Post and Kuntze that they were merely correcting what they wrongly regarded as an error by Miquel and it is significant that they attributed the name in its "corrected" form to him. Under the Code there was no justification for the correction, and indeed the corrected form itself must be regarded as an orthographic error so far as the generic name is concerned, though not on grounds of scholarship.

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* Of course, another spelling may be conserved, but without change of author or date.

In these circumstances, *Monocarpus* Carr (1956) and *Monocarpia* Miquel must be treated as legitimate and different names in the same way as *Peponia* and *Peponium*, since "*Monocarpus* Post & Kuntze" (1903) has no real existence. It follows at once that the arbitrarily formed new name *Carrpos* Proskauer (1961) is superfluous and illegitimate.

This is not a plea for the general retention of the idea that names should be made which differ only in the ending, or only slightly in other ways. It is in fact unfortunate that the consequences of retaining *Peponia* and *Peponium* were not forseen; only taxonomic difference was taken into account and the possibility of orthographic and typographic confusion in non-taxonomic work was overlooked. The much more liberal application of Art. 75 by Rickett and Stafleu in their recent correction of the list of *nomina conservanda* might well form a pattern for an amendment to the Code forbidding the future manufacture of such variants. An amendment of this kind could not be retroactive owing to the possibility of upsetting a large number of names established as correct under the Code as it stands.

The danger in acceptance of Dr. Proskauer's interpretation lies not only in his treatment of orthography as such, but more especially in regarding the publication of later orthographies as valid publication of new names under the terms of Art. 32.

NOMINA CONSERVANDA PROPOSITA

(79) Proposal to conserve the generic name **Sorghum** Moench (*Gramineae*) versus *Sorgum* Adans. (*Gramineae*).

Sorghum Moench, Meth. 207 (1794), *nom. cons. prop.*
Typus: *S. bicolor* (Linn.) Moench, *l.c.* (*Holcus bicolor* Linn.)

The name *Sorghum* has been maintained by a large number of workers, but has been variously attributed to Moench, or to Persoon (Syn. Pl. 1: 101, 1805) who employed the name in the same sense. The following are a few examples: Beauv., Agrost. 131 (1812); Roem. et Schult., Syst. Veg. 2: 53 (1817); Trin., Fund. Agrost. 188 (1820): Nees, Fl. Afr. Austr. 85 (1841); Dumortier in Bull. Soc. Bot. Belg. 7: 32 (1868); Benth. in Benth. et Hook. f., Gen. Pl. 2: 1135 (1883); Boiss., Fl. Orient. 5: 459 (1884); Hegi, Ill. Fl. Mit.-Eur. 1: 184 (1907); Stapf in Prain, Fl. Trop. Afr. 9: 104 (1917); Hitchcock, Man. Grasses U.S. 748 (1935); Snowden, The cultivated races of Sorghum (1936); Snowden in J. Linn. Soc., Bot. 55: 191 (1955). Furthermore the name has become deeply entrenched in agricultural literature: Snowden (*l.c.*, 1936) cites over 250 references to agricultural papers referring to the crop under this name.

Sorgum Adans., Fam. Pl. 2: 38, 606 (1763), *nom. rejic. prop.*

The name *Sorgum* was adopted by several of the earlier botanists but was attributed to Linnaeus or Micheli. *Sorgum* Adans. has recently been taken up by Mansfeld in Fedde. Rep. 45: 7 (1938), and subsequently by Pilger in Engl. Nat. Pfl.-Fam. ed. 2, 14e: 142 (1940) and Ohwi, Fl. Jap. 158 (1953), among others, in place of *Sorghum* Moench, not strictly in the sense of Adanson.

Discussion: The generic name "*Sorgum*" was first used by Linnaeus in his Systema (1735), but in the various editions of his Genera Plantarum it was included in *Holcus*. The latter name is now conserved, with *H. lanatus* Linn. as its type. In the Species Plantarum, 1047 (1753) Linnaeus placed the *Sorgum* of his earlier work under *Holcus* as *H. sorghum, H. saccharatus* and *H. halepensis*. It is therefore clear that "*Sorghum*" and "*Sorgum*" are orthographic variants.

The citation by Adanson of "*Holcus* Linn." as a synonym of his *Sorgum* renders the latter superfluous and therefore illegitimate; its rejection is automatic. On account of its homonymy with *Sorghum* Moench, however, the latter still requires to be legitimized by conservation.

Mansfeld (*l.c.*) has maintained that Adanson intended his citation to mean "*Holcus* Linn. *pro parte*", and that *Sorgum* Adans. is therefore acceptable: but it is as likely, since Linnaeus' description of *Holcus* agrees closely with the "*Sorghum*" part of it, that Adanson was replacing it by an earlier name that seemed to him more appropriate. In such cases it is fruitless to speculate upon what the author meant, and one must apply the Rules to what he actually did.*

Moench included two species under his *Sorghum*, and the selection of *S. bicolor* as the type of the generic name is because, as pointed out by Snowden (The cultivated races of *Sorghum*, 1936), *S. saccharatum* is of doubtful application.

There is no legitimate alternative name for this important genus of crop and fodder plants, and the conservation proposed is clearly desirable in the interests of nomenclatural stability.

Proposed by W. D. Clayton (Kew).

* * *

(80) Proposal to conserve the generic name 4117 **Harrisonia** R. Br. ex A. Juss. 1825 (Simaroubaceae).

In bryological literature the generic name *Harrisona* dates from Adanson, Fam. Pl. 2: 491. 1763, but because of the starting date for the *Musci* has always been taken from Sprengel, Syst. Veg. 4: 145. 1827. It is a later homonym of the Simaroubaceous genus *Harrisonia* R. Br. ex Juss. 1825. For that reason the moss genus has received a new name, viz *Rhacocarpus* Lindb. in Oerv. K. Vet. Ak. Forh. 19: 607. 1863, under which name it appears in leading modern bryological handbooks, although species were described under *Harrisonia* as late as 1897 by C. Mueller.

Unfortunately it has appeared that Adanson's moss genus has been validated by Leman as early as 1821, Dict. Sc. Nat. 20: 290. 1821, as *Harissona*, which appears to us a mere etymological variant. He copied the description from Adanson and cited seven moss species under it making no transfers. Six of these were species described by Hedwig, the seventh by Swartz. They are now, according to Dr. van der Wijk, assigned six other different genera; the genus has not been typified as yet.

The existence of this description by Leman remains, however, a nomenclatural menace for both *Rhacocarpus* and the Simaroubaceous genus *Harrisonia*. The simplest way to dispose of it and avoid serious complications would be its typification with the third species mentioned, viz *Neckera heteromalla* Hedw. in which case *Harissona* Adans. ex Leman would automatically become a synonym of *Cryphaea* (1814). For bryology this would be sufficient but it leaves the homonymy with the Simaroubaceous genus unsolved.

The only way to cope with that is to conserve *Harrisonia* R. Br. ex Juss. against *Harissona* Leman, which Dr. van der Wijk fully agrees from the standpoint of bryological nomenclature. The Simaroubaceous genus *Harrisonia* is widely distributed from Africa to Asia and Australia and has several well-known medicinal uses.

The conservation of *Harrisonia* R. Br. ex A. Juss. serves stabilisation in both bryological and phanerogamological nomenclature.

Nomen genericum conservandum propositum:

Harrisonia R. Br. ex A. Juss. Mém. Mus. Hist. Nat. Paris 12: 517, t. 28 no. 47. 1825.
T.: *H. brownii* Juss. l.c. 540.

Nomen genericum rejiciendum propositum: *Harissona* Adans. ex Leman, Dict. Sc. Nat. 20: 290. 1821.
T.: not indicated.

Proposed by: H. P. Nooteboom and C. G. G. J. van Steenis (Leiden).

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(81) Proposal for the conservation of 926. **Cyanastrum** Oliver in Hook. Icon. Pl. **20**: sub *t. 1965*. 1891 (nom. cons. prop.), T.: *C. cordifolium* Oliver (*Cyanastraceae* vel *Tecophilaeaceae*)
versus *Cyanastrum* Cassini, Dict. Sci. Nat. **58**: 458. 1829 (nom. rej. prop.) (*Compositae*).

In the course of preparation of the list of "Nomina Familiarum Conservanda (Angiospermae)" I noticed that *Cyanastrum* Oliver, type genus of the family *Cyanastraceae* Engler, Bot. Jahrb. **28**: 357. 1900, is a later homonym of *Cyanastrum* Cassini and thus

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* In his Index on p. 584 Adanson refers *Holcus* L. definitely to his *Sorgum* as follows: "hOlcus, *Lin.* V. *Sorgum.*" [F.A.S.]

requires conservation. The latter name was first used by Cassini in Dict. Sci. Nat. **44**: 36, 39. 1826 as an alternative name for *Cyanopsis* Cassini (validly published in Bull. Soc. Philom. **1816**: 200. 1816); later, in Dict. Sci. Nat. **58**: 458. 1829, Cassini introduced the name *Cyanastrum* as an avowed substitute for *Cyanopsis* Cassini and thereby validly published *Cyanastrum*. According to our present rules of nomenclature *Cyanastrum* Cassini is an illegitimate name, but nevertheless *Cyanastrum* Oliver, as a later homonym, is not available without conservation. The correct name for the latter genus would be *Schoenlandia* Cornu, Bull. Soc. Bot. France **43**: 24. 1896, based on the species *Sch. gabonensis* Cornu. But apparently this name has never been used by other authors. Since *Cyanastrum* Oliver is the type genus of the family name *Cyanastraceae* and this name has been in general usage among botanists from the time of its publication onwards, I strongly recommend, in the interest of stability, conservation against the earlier homonym.

The genus *Cyanastrum* is distributed in Tropical Africa, and six to seven species are assigned to it. In the case of non-conservation at least five new combinations would be necessary.

Proposed by: G. Buchheim (Berlin-Dahlem).

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(82) Proposal to conserve the generic name **Cistella** Quélet (Hyaloscyphaceae) against *Cistella* Blume (Orchidaceae).

Cistella Quélet, Enchiridion Fungorum, p. 319-320. 1886. (*nom. conserv. prop.*) as amended, Nannfeldt, Nova Acta Regiae Soc. Scient. Upsal. Ser. IV, vol. 8(2): 265 et seq. 1932. Lectotype ("pseudotypus" of Nannfeldt) *Cistella dentata* Pers. ex Fr.) Quél.

Adopted by: Quélet, loc. cit.; Nannfeldt (loc. cit.), Dennis, Myc. Papers, Commonwealth Myc. Inst., 32: 58-60, 1949; Ainsworth and Bisby, Dict. Fungi (ed. 4), p. 72, 1954; Cash, Mycologia 50: 642-643, 1958.

Cistella Blume Bijdr. 293, t. 55. 1825. (*nom. rej. prop.*)

Adopted by: All authors since Blume have regarded this as a synonym of *Geodorum* Jackson in Andr. Bot. Rep. t. 626, 1810.

Discussion: Blume's *Cistella* of the *Orchidaceae* was monotypic and has been uniformly relegated to the synonymy of *Geodorum* Jackson (see Index Kewensis 1: 546. 1893) which has thirteen or more recognized species. Blume's name does not appear to have been used since his original publication. The extensive treatments of *Cistella* Quél. emend. Nannfeldt by Nannfeldt (loc. cit.) and Dennis (loc. cit.) have definitely established the need for the genus in its present limits. As pointed out by Cash (loc. cit.) there appears to be no other existing generic name which can be properly applied to the 12 or more species heretofore assigned to *Cistella* Quél. The name has been generally accepted by mycologists concerned with the Discomycetes. Therefore it seems in order to propose the conservation of Quélet's name.

Proposed by: Edith K. Cash and John A. Stevenson (Beltsville Md.).

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(83) Proposal to conserve the generic name **Monochaetia** (Saccardo) Allescher against *Seiridium* Nees ex Link sensu Fuckel and *Hyaloceras* Durieu et Montagne (all of the Melanconiaceae).

Monochaetia (Sacc., Syll. 3: 797. 1884, as subg.) Allesch. in Rabenh., Krypt.-Fl. 1(7): 665. 1902. (nom. cons. prop.).

Type species: *Monochaetia monochaeta* (Desm.) Allesch. loc. cit.

Seiridium Nees ex Link in Willdenow, Linné Species Plant., ed. 4, T. VI, pt. II, p. 126. 1825 sensu Fuckel (Symb. Myc. p. 391, 1870.) (nom. rej. prop.)

Type species: *S. marginatum* Nees ex Link sensu Fuckel, loc. cit.

Hyaloceras Dur. et Mont. Fl. Alg. 587. 1846. (nom. rej. prop.)

Type species: *H. notarisii* Dur. et Mont. loc. cit.

Reasons for conservation: The genus *Monochaetia* was established as a subgenus of *Pestalotia* (as *Pestalozzia*) by Saccardo (Syll. Fung. 3: 797, 1884.) and given generic rank by Allescher (in Rabenhorst, Krypt.-Flora 1(7): 665, 1902). A few years later Saccardo (Syll. Fung. 18: 485, 1906.) concurred. Allescher recognized 23 species but did not indicate a type. It seems in order to accept *Monochaetia monochaeta* (Desm.) Allescher as the type as has been done by Clements

and Shear (The Genera of the Fungi, p. 384, 1931.) In Allescher's account three species precede his description of *M. monochaeta,* but they are species not listed by Saccardo in his first account. A substitute binomial, *M. desmazierii* Sacc. (Syll. Fung. 18: 485, 1906), is available if the specific epithet is considered a tautonym, which does not appear to us to be the case.

At least seventy-five species of *Monochaetia* have been described and more than forty are recognized as acceptable in a monographic study by Guba now in press. In addition to Saccardo, most general mycological works recognize the genus, including Allescher as noted (Rabenhorst's Kryptogamen-Flora Abt. VII), Migula (Kryptogamen-Flora von Deutschland, u.s.w. Band III, 4 Teil, Abt. 1), Vassiljevsky and Karakulin (Fungi Imperfecti parasitici, pars II, Melanconiales), Clements and Shear (Genera of Fungi), Ainsworth and Bisby (Dictionary of the Fungi). All species are associated with leaves and other plant parts to a greater or less extent, and several in particular are of economic importance as parasites. *Monochaetia* has been the generic name used almost uniformly in the extensive phytopathological literature on the subject.

Two generic names appear to have priority, *Seiridium* (*Siridium* of Clements and Shear) and *Hyaloceras. Seiridium* was first published by Nees v. Esenbeck (Das System der Pilze und Schwämme, p. 22. 1817). The single species described (*S. marginatum*) occurred on rose stems in Germany. Fries (Systema Mycologicum 3: 473, 1832) placed this species first under his genus *Coryneum,* the second and only other recognized species being *C. umbonatum,* now generally accepted as the type of the genus (Clements and Shear, p. 384, 1931). In discussing the first species Fries noted that "under the microscope the septate conidia are seen to be wholly those of *Coryneum,* differing only in the more slender pedicels and the hyaline terminal, filiform, apiculus of the conidia." This would indicate that Fries regarded the second species as the true *Coryneum,* a view now universally accepted. Link (in Willdenow, Linné Species Plant., ed. 4, T. VI, pt. II, p. 126. 1825) appears to have been the first post-starting point author to recognize *Seiridium* by validly publishing the generic name together with a binomial name thus establishing its type species (monotype). Brongniart (Dict. Sci. Nat. 33: 528. 1824) and Fries (Syst. Orbis Veg. Pars 1: 192. 1825) also described the genus but without mention of a species. Sprengel (in Linné Syst. Veg., ed. 16, 4(1): 569. 1827) described both genus and species but is predated by Link (loc. cit.). Krombholtz (Abbild. Beschreib. essb. schäd. verd. Schwämme, Heft 1: 6. 1931), in common with other writers of the period, including Corda (Anleit. zu Stud. Myc., 1842) and Bischoff (Allgem. Übers Org. Phan. U. Krypt. Pfl., 1851), reproduced the original figure of *Seiridium* of Nees, thus perpetuating the error of conidia produced in chains held together by slender filaments.

Fuckel (Symb. Myc. p. 391. 1870.) studied the fungus microscopically and was the first to present dependable data concerning it. He found it to be a species with six-celled conidia with four brown center cells and two hyaline end cells. He issued the fungus under the name *S. marginatum* (Fr.) Nees in Fungi Rhenani, No. 2136. Hazelinsky (Verhandl. zool.-bot. Gesellsch. Wein 20: 214. 1870) also used this binomial for a different fungus with four-celled conidia. Saccardo confused the issue by accepting this later usage for the binomial and giving a new name, *Pestalotia seiridioides,* to the Nees species as studied by Fuckel.

Von Hoehnel (Sitzungsb. d. Kaiserl. Akad. d. Wissensch. Wien, Mathem.-Naturw. Kl. 125: 29-23. 1916.) reviewed the history of *Seiridium* and studied Fuckel's specimen. As a result he decided the fungus was not melanconiaceous and he accepted the genus in the sense of Fuckel with *S. marginatum* Nees as the type. He recognized *Monochaetia* as belonging in the Melanconiaceae the genera of "which do not have closed stromata and whose conidia are not bound together by a heavy slime." Guba finds that these criteria for separating the genera do not hold and that *Monochaetia* is therefore synonymous with *Seiridium* Nees ex Link sensu Fuckel. *Seiridium* has been recognized (Clements and Shear, Ainsworth and Bisby, and other recent workers) as a genus of the Melanconiaceae characterized by conidia in chains as suggested by the original figure of Nees. Other than this imaginative figure there is no evidence to support the conidia in chains theory. Other species assigned to the genus have been long since transferred to *Phragmidium* and *Phragmotrichum* or are known only from old and inadequate descriptions.

Seiridium could possibly be disposed of by considering it a *nomen dubium,* but in the light of the studies by Fuckel and von

Hoehnel, the situation can be best met by conserving *Monochaetia* against it.

Hyaloceras was described by Durieu and Montagne (Flore Alger. p. 587. 1846.) with one species *H. notarisii.* About five additional species have been added to the genus in the years since 1846. Von Hoehnel (Sitzungsb. d. Kaiserl. Akad. d. Wissensch. Wien, Mathem.-Naturw. Kl. 119: 663-4, 1910.) pointed out that *Monochaetia* was synonymous with *Hyaloceras* and added that the species of the former genus should accordingly be transferred. He did not make any actual transfers. Diedicke (Kryptogam. Flora Mark Brandenb. 9: 877-881. 1915) followed von Hoehnel's suggestions, citing five species of *Hyaloceras.* Von Hoehnel later (l.c. 125: 33. 1916) changed his mind and recognized *Monochaetia.* No more than two or three additional species have been described since 1915 and the name is rare in mycological literature. *Hyaloceras* then is a synonym of *Seiridium* Nees ex Link. *Monochaetia* should be conserved against *Seiridium* Nees ex Link and *Hyaloceras* Dur. et Mont. since it is the generally accepted generic name for the fungi involved. A large number of transfers would otherwise be necessary.

Proposed by: E. F. Guba and John A. Stevenson (Beltsville Md.).

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(84) Proposal to conserve the generic name **Phyllocharis** Diels (*Lobeliaceae*).

Until the present it has been overlooked that *Phyllocharis* Diels (Bot. Jahrb. 55: 122. 1917), an endemic genus of New Guinean *Lobeliaceae,* last revised by Wimmer (Pfl. Reich Heft 107: 724. 1953) and Tuyn (Fl. Mal. 6: 137. 1960), is a homonym of *Phyllocharis* Fée (Essai Crypt. lix, xciv, xcix, t. II fig. 3 & 7. 1824), a genus of lichens of which two species were described.

15 years after its publication Montagne (Plant. Cell. 130-144. 1838-42) recognized that *Phyllocharis* Fée was congeneric with the earlier lichen genus *Strigula* Fr. (Syst. Myc. 2: 535. 1823) and all later authors have agreed with this reduction. According to Santesson's (Symb. Bot. Upsal. 12: 1. 1952) recent world monograph of foliicolous lichens no other author than Fée in 1824 has used the name *Phyllocharis* for lichens. *Phyllocharis* Fée can therefore be considered as obsolete as a correct name, a view shared by the Leyden lichenologists.

There is no doubt, however, that *Phyllocharis* Diels is a later homonym; it has no taxonomic synonyms.

In view of the fact that rejection of *Phyllocharis* Fée will not cause any inconvenience and have no nomenclatural consequences in lichenology, and that it would be highly inconvenient if *Phyllocharis* Diels were to be replaced by a new generic name, requiring at least 5 new combinations, it seems to us that its conservation would distinctly conduce to stability of nomenclature and it is accordingly proposed.

Nomen genericum conservandum propositum: *Phyllocharis* Diels, Bot. Jahrb. 55: 122. 1917.

Lectotype: *P. oblongifolia* Diels.

Nomen genericum rejiciendum propositum: *Phyllocharis* Fée, Essai Crypt. lix, xciv, xcix, t. II fig. 3 & 7. 1824.

Lectotype: *P. complanata* Fée.

Proposed by: R. C. Bakhuizen van den Brink, R. A. Maas Geesteranus, C. G.G. J. van Steenis (Leiden).

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(85) Nomen genericum conservandum propositum: 7854 **Sarmienta** Ruiz & Pav. (1794) vs. *Urceolaria* Huth, (1756) et *Urceolaria* Molina, (1782): omnia Gesneriaceae. Non *Urceolaria* Ach. (1798), *Urceolaria* Willd. (1790), *Urceolaria* D. Dietr. (1818), nec *Urceolaria* Herb. (1826).

Typus: *Sarmienta scandens* (Brandis) Pers. Syn. Pl. 1: 13 (1805).

a) *Nomen conservandum propositum: Sarmienta* Ruiz & Pavon, Fl. Peruv. Chil. Prodr. 4 (1794).

The name *Sarmienta* has been accepted by all modern authors and most authors since 1800 with the exceptions of Molina and O. Kuntze.

b) *Nomen rejiciendum propositum: Urceolaria* Huth, Beschreib. Arz. dienl. Pfl. 2: 96-97. *t. 43* (1756).

The name *Urceolaria* was validated by Huth in his translation and republication of the pre-Linnaean genus *Urceolaria* Feuillée, Journ. Obs. 3: 69-70. *t. 43* (1725). *Urceolaria* Molina, Saggio Sulla Storia Nat. Chili 157 (1782) was also based upon the monotypic *Urceolaria* Feuillée and was therefore invalid

when published, but is considered conjointly with *Urceolaria* Huth because of close association in the literature. The name *Urceolaria* was adopted by Molina in the first edition of his Saggio (1782); in the Spanish, German (1786), French (1789), and English (1809) translations of this work; and in the second edition at pages 136 and 277 (1810). Roemer & Schultes, Syst. 1: 52 and 77 (1817) listed *Sarmienta* and *Urceolaria* as separate genera. O. Kuntze, Rev. 2: 478 (1891) and in Tom von Post, Lexicon 581 (1904), considered *Urceolaria* as the correct name for the genus. Such early authors as the following adopted *Sarmienta* but gave *Urceolaria* as a synonym: Ruiz & Pavon, Fl. Peruv. Chil. 1: 8 (1798); Persoon, Syn. Pl. 1: 13 (1805); Martius, Nov. Gen. Sp. Bras. 3: 66 (1829); G. Don, Hist. 4: 651 (1838); Decandolle, Prodr. 7: 547 (1839); Steudel, Nomen. Bot. 2: 514 (1841); Gay, Hist. Chile. Bot. 4: 350 (1849); and Hanstein, Linnaea 34: 421 (1865). Bentham & Hooker f. Gen. Pl. 2: 1012 (1867); Durand, Index 306 (1888); and Fritsch in Engler & Prantl, Pflanzenfam. 4(3b): 162 (1894) did not list the synonym *Urceolaria*.

c) *Discussion:* In 1725 Louis Feuillée adequately described and figured the monotypic Chilean genus *Urceolaria* (Gesneriaceae). By the Code, Feuillée's pre-Linnaean genus has no standing, but a German translation effectively and validly published by D. G. L. Huth in 1756 must. Although J. I. Molina also used and made direct reference to Feuillée's *Urceolaria* in 1782, the publication of Ruiz and Pavon's name *Sarmienta* for the genus in 1795 completely overshadowed both earlier publications, and for the next hundred years the name *Urceolaria* was mentioned only as a synonym, with the exception of Molina who used it as late as 1810. Then, in 1891, O. Kuntze recognized *Urceolaria* as the correct name for the taxon. Karl Fritsch did not mention *Urceolaria* in his treatment of the Gesneriaceae for Engler and Prantl's natürlichen Pflanzenfamilien in 1894, but in August of the same year published an article in the Österreichische Botanische Zeitschrift entitled "Welcher Pflanzengattung gebührt der Name *Urceolaria*?" On page 287 of volume 44 Fritsch noted that *Urceolaria* Feuillée was pre-Linnaean and invalid. Concerning *Urceolaria* Huth he then wrote: "Das Werk bleibt aber trotzdem vorlinnéisch — eine wörtliche Uebersetzung kann nicht als neue Publikation gelten."

Concerning *Urceolaria* Molina he stated: "Dies ist absolut keine Gattungsdiagnose und Molina hat kein Verdienst an der Aufklärung dieser Pflanze." These reasons, as given by Fritsch for his refusal to recognize *Urceolaria* are insufficient and we must concur with O. Kuntze: the correct name for this taxon is *Urceolaria* Huth.

d) *Reasons for conserving the name* **Sarmienta** Ruiz & Pav. The recognition of the name *Urceolaria* Huth for this genus would cause needless confusion because the name *Sarmienta* is used by all modern botanic authority, while in horticulture the plant is known and grown solely by the name *Sarmienta*. Moreover, the name *Urceolaria* itself is a source of confusion in that it has been used at the generic level in at least five different families.

e) *Consideration of the type for the genus:* An unusual taxonomic problem arises in the consideration of the correct combination for the type of this monotypic genus. Feuillée (1725) used the polynomial *Urceolaria foliis carnosis scandens* as did Huth in 1756. Molina (1782), writing in Italian, although consistently using italicized binomials elsewhere here wrote "*Urceolaria* scandente (*Urceolaria foliis carnosis scandens* Feuil.)..". Brandis, possibly considering the 'scandente' an orthographic error, translated this passage as "*Urceolaria scandens* (*Urceolaria foliis carnosis scandens* Feuill.).." (J. D. Brandis *Versuch einer Naturgeschichte von Chili* 133 (1786).) Here, in translation, appears the first valid binomial for the species and under the Code as it stands must represent the correct combination for the type! Later combinations are: *Sarmienta repens* Ruiz & Pav. Fl. Peruv. Chil. 1: 8. *t. 7. f. b* (1798); *Sarmienta scandens* Pers. Syn. Pl. 13 (1805); *Urceolaria chilensis* Molina, Sagg. Chili 136 and 277 (1810). The correct combination if *Sarmienta* is conserved will therefore be *Sarmienta scandens* (Brandis) Pers. Syn. Pl. 13 (1805).

Proposed by: D. L. Denham (Boulder, Colo.).

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(86) Proposal for the conservation of the generic name 7757 **Enallagma** Miers ex Baillon (Bignoniaceae), Hist. Plantes, 10: 54 (1888) versus *Dendrosicus* Raf. (Bignoniaceae), Sylva Tellur. 80 (Oct. 1838).

Enallagma Miers ex Baillon (Bignoniaceae): nom. cons. prop.

Adopted by: K. Schum. in Engl. et Prantl, Pflanzenfam. 4, 3B: 247 (March 1895); Small,

Fl. Miami, 171 (1913); Urban in Ber. Deutsch. Bot. Ges. 34: 757 (1916); Urban, Fl. domingensis, in Symb. Ant. 8(2): 642 (1921); Britton and Wilson, Sci. Survey Porto Rico and Virgin Is. 6(2): 197 (Aug. 1925); Standley, Fl. Brit. Honduras, in Field Mus. Publ., Bot. Ser., 12: 361 (1936); Standley, Fl. Costa Rica, in Field Mus. Publ., Bot. Ser., 18(3): 1119 (July 1938); Seibert, Bignoniaceae of Maya Area, in Carnegie Inst. Wash. Publ. 522: 381 (June 1940); Schnee, in Pittier et al., Cat. Fl. Venez. 2: 410 (1947); Sandwith in R. O. Williams and Cheesman, Fl. Trinidad and Tobago, 2(5): 322 (Dec. 1954); León y Alain, Fl. Cuba, 4:443 (1957).

Type species: *Enallagma cucurbitina* (L.) Baillon (*Crescentia cucurbitina* L.), now treated as a synonym of *E. latifolia* (Mill.) Small (*Crescentia latifolia* Mill.).

Dendrosicus Raf. (Bignoniaceae): nom. rej. prop.

Adopted by: Merrill, Index Rafinesquianus, 220 (1949).

Type species: *Dendrosicus saxatilis* Raf., nom. illeg., *Crescentia cucurbitina* L. being cited in synonymy.

Discussion: three species are now recognized in the genus *Enallagma,* which is closely related to *Amphitecna* Miers (1868) and to *Crescentia* L. (1753). The type species, *E. latifolia,* often called "Wild Calabash" or "Black Calabash", is a very well-known tree in northern tropical America and is sometimes cultivated in botanical gardens. Rafinesque's monotypic genus *Dendrosicus* has been adopted only by Merrill, and solely for the purpose of his Index Rafinesquianus. The name should not be regarded as an orthographic variant of *Dendrosicyos* Balf. fil. (1882), in *Cucurbitaceae.*

Proposed by: N. Y. Sandwith (Kew).

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(87) Proposal for the conservation of the generic name 7714 **Campsis** Loureiro, Fl. Cochinch. 377 (1790) versus *Notjo* Adans. Fam. Pl. 2: 226 (1763).

Campsis Loureiro (Bignoniaceae): nom. cons. prop.

Adopted by: Bureau, Mon. Bignon. 48 (1864); Baillon, Hist. Pl. 10: 40 (1888); K. Schum. in Engl. et Prantl, Pflanzenfam. 4, 3B: 230 (Sept. 1894); Bailey, Standard Cycl. Hortic. 2: 651 (1914); van Steenis, Bull. Jard. Bot. Buitenzorg, sér. 3, 10: 202 (Dec. 1928); Makino and Nemoto, Fl. Jap., ed. 2, 1080 (1931); Merrill, Comm. Loureiro, Fl. Cochinch. 354 (1935); Handel-Mazzetti, Symb. Sinicae, 7: 888 (1936); Fournier, Les Quatre Flores de la France, ed. 2, 805 (1946); Fernald, Gray's Man. Bot. ed. 8, 1300 (1950); R.H.S. Dict. Gardening, 1: 380 (1951); Gleason, New Britton and Brown Ill. Fl. N.E. United States and adjacent Canada, 3: 255 (1952); Stearn, Bot. Mag. n.s. t. 198 (Aug. 1953); Vasilchenko, Fl. U.R.S.S. 23: 1 (1958); Kitamura and Okamoto, Coloured Ill. Trees and Shrubs of Japan, 225 (1958).

Type species: *Campsis adrepens* Loureiro, now treated as a synonym of *C. grandiflora* (Thunb.) K. Schum. (*Bignonia grandiflora* Thunb.).

Notjo [Kaempf. ex] Adanson (Bignoniaceae): nom. rej. prop.

Adopted by: no-one. Mentioned as "genus non satis notum" by Post and Kuntze, Lex. Gen. Phan. 392 (1903).

Type species: none stated.

Dicussion: Mr. H. K. Airy Shaw has pointed out to me that Adanson's validly published genus *Notjo* was attributed by Adanson himself to the "Notsjo" of Kaempfer's Amoenitatum Exoticarum Politico-Physico-Medicarum fasc. 5, 856 (1712), while Kaempfer's plant was referred by Thunberg (Fl. Jap. 253 (1784)) to his *Bignonia grandiflora* (*Campsis grandiflora* (Thunb.) K. Schum.). Thunberg's identification is very probably correct, but Adanson gave a falsified version of his own of Kaempfer's description and it is no wonder that no-one has subsequently identified this genus *Notjo,* which is not mentioned in Bentham and Hooker's Genera Plantarum or the Pflanzenfamilien, nor by Dalla Torre and Harms, nor by Lemée. As it may well be argued that *Notjo* must be identified with the genus accepted and known to everyone as *Campsis,* while Adanson's name was published much earlier than Loureiro's, it is necessary to conserve the name *Campsis,* not only because the 2 species at present recognized occur in separate hemispheres and are favourite garden-plants ("Trumpet Creepers") with hybrids in the warmer parts of North Temperate regions, but also because, although at present a small genus, *Campsis* may well be extended in the near future to cover the Old World tropical genera *Pandorea* and *Tecomanthe* (see van Steenis, loc. cit. supra, p. 202, and cf. Fl. Malesiana, Ser. 1, 4. p. (xxi) (1948), in obs.), whose names are later.

Proposed by: N. Y. Sandwith (Kew).

(88)Proposal for the conservation of the generic name **Peripterygium** Hasskarl (1843) against *Sioja* Buchanan-Hamilton ex Lindley (1836), and rejection of the later synonym *Cardiopteris* Wallich (1847).

Peripterygium Hassk. in Hoeven & de Vriese, Tijdschr. Nat. Gesch. Physiol. 10: 142, 1843 et Cat. Pl. Hort. Bot. Bogor. 234, 1844 (*nom. cons. prop.*).

Type species: *P. quinquelobatum* Hassk. Cat. Pl. Hort. Bot. Bogor. 235, 1844, sphalm. "quinquelobum".

Adopted by: Williams in Bull. Herb. Boissier, sér. 2, 5: 225, 1905; Sleumer in Notizbl. Bot. Gart. Berlin, 15: 257, 1940 et Engler-Prantl, Nat. Pflanzenfam., ed. 2, 20 b: 400, 1942; Bullock in Taxon 7: 9, 1958 et 8: 164, 1959; Hutchinson, Fam. Fl. Pl. ed. 2, 1: 316, t. 174, 1959.

Sioja Buch.-Ham. ex Lindl. Introd. Nat. Syst. Bot. ed. 2, 82, 1836 (*nom. rej. prop.*).

Type species: *S. sanguinaria* Buch.-Ham. in Lindley, Introd. Nat. Syst. Bot., ed. 2, 82, 1836; Wall. Cat. sub n. 8033, 1847, nomen nudum.

Adopted by: no one, as a generic name, since its publication.

Discussion: This interesting Indo-Malaysian genus of doubtful affinity, is generally known in Indian and Malayan floras as *Cardiopteris* Wallich (in Cat. 8033, 1847, nomen nudum; Bennett & Brown, Pl. Jav. Rar. 246, 1852, cum descript.). Engler (in Engler-Prantl, Nat. Pflanzenfam. 3, 5: 257, 1893) changed the orthography of the generic epithet to *Cardiopteryx*. According to him, Wallich (*loc. cit.*) wrongly framed the name in allusion to the winged, heart-shaped fruits and by rejecting the original epithet, the name of the fossil fern genus *Cardiopteris* Schimp. can also be retained. However, *Cardiopteris* Wall. (*Cardiopteryx* auct. plur.) is a *nomen nudum* in Wallich's Catalogue, whose characters were not defined. It is also a later nomenclatural synonym of the properly established genus, *Peripterygium* Hassk. (*loc. cit.*) and is, therefore, superfluous in the sense of the Code. The generic name *Peripterygium* Hassk. was not accepted later until restored by Williams (*loc. cit.*), and Sleumer (*loc. cit.*) proposed some new combinations (fide Notizbl. Bot. Gart. Berlin 15: 257, 1940). This suggestion has been accepted by Bullock (*loc. cit.*) and Hutchinson (*loc. cit.*). Moreover, the name *Peripterygium* Hassk. (Syn. *Cardiopteris* Wall., nom. illeg.) has been proposed by Bullock (in Taxon 8: 164, 1959) as the type genus of a new family, Cardiopteridaceae. The generic name *Sioja* has never been used apart from its original publication by Buchanan-Hamilton in 1836. Under the circumstances, to avoid the necessity of making new combinations, conservation seems desirable and is hereby proposed.

Proposed by: J. K. Maheshwari (Howrah, W.B.).

* * *

(89) **Rhodophyllus** Quél. nomen conservandum propositum.

The genera *Entoloma, Nolanea, Leptonia, Eccilia, Claudopus,* and *Rhodophyllus* are in danger of being replaced by the genus *Acurtis* Fr., Summa Veget. Scan. p. 337. 1849 which has ample priority over all these and their synonyms. This situation has been pointed out by me at previous opportunities. But the facts behind the question at hand have not yet come to the knowledge of the mycological public and deserve a discussion which, in my opinion, should be the basis for a formal proposal to conserve the generic name *Rhodophyllus* Quél., Enchiridion, p. 57. 1886. The question of conserving *Rhodophyllus* is by no means a minor one since several hundred species distributed over all continents are involved, among them a number of important edible and poisonous species. There have been three main attempts to solve the problem. One was that of Konrad & Maublanc which has recently been adopted by Dennis, Orton and Hora and which is meant to bypass the problem by a systematic solution which consists in recognizing again the old-Fries-Saccardo genera as enumerated above as genera independent from each other. This solution does not satisfy the majority of taxonomists who recognize a single genus which in spite of all nomenclatorial discussions they keep calling *Rhodophyllus*. Since it is not a satisfactory solution to adapt taxonomy to the difficulties of the nomenclaturists, we must look for another way out. The second solution is that of Singer & Smith who in 1950 proposed to the Stockholm Congress the conservation of *Rhodophyllus* with the type *R. lividus* (Bull. *ex* St-Amans) Quél. (at that time *R. lividus* (Bull. *ex* Fr.) Quél.), conditional (i.e. only in the case that the genus is considered to include all the other Fries-Saccardoan elements) or unconditional. It has been pointed out by

some mycologists that there is no precedent or acceptable manner for conditional conservation, and that unconditional conservation would force the name *Rhodophyllus* upon those who still consider *Entoloma* generically different from the other genera (*Eccilia, Nolaneae, Leptonia, Claudopus*) which did not seem desirable to that school.

It was rejected by ballot vote by the Committee for fungi. The third attempt to eliminate *Acurtis* from competition was made by Donk who quotes Art. 59 and 63 of the Code as referring to *Acurtis* which would mean that this generic name was not validly published. However, there are grave doubts regarding the applicability of any of the two articles in this case. *Acurtis giganteus* is an American species whose type and numerous collections in the field and herbarium have been studied carrefully and cannot simply be called aborted forms, monstrosities, or a state in the life cycle of that species, at least as long as the wording of the present Code is taken as basis. Fruiting mycelium will almost in any given place turn into both carpophoroids and carpophores. A carpophoroid will not produce carpophores, and carpophores will not produce carpophoroids; they appear simultaneously and with such regularity that the presence of carpophoroids is a taxonomic character of the species from the beginning of its history as an agaric. The carpophoroids are only rarely quite sterile, mostly they are somewhat intermediate between a sterile and a fully fertile condition, and sometimes transitional material (with the beginning of lamellae formation) can be found; if fertile, basidiospores of the type produced by the carpophores are formed by the carpophoroid. Thus we have neither an imperfect (not basidiospore-producing) or sterile stage nor a monstrosity but a dimorphism leading to gastromycetoid forms in one form. Whether the type of *Acurtis giganteus* actually contains basidia or basidiospores is hard to tell because searching for them would mean cutting the entire specimen to pieces; but it is also irrelevant inasmuch as it is demonstrated that this form potentially produces basidiospores (and mostly does so) and even if it had been a young or retarded specimen, it would still not mean that it is not a perfect form. Besides it was both Schweinitz's and Fries's intention to describe a Basidiomycete: They both thought they were dealing with a clavariaceous fungus. Since then the application of the articles invoked is, to say the very least, extremely problematical, another genus in general use and obviously belonging to the same taxonomic group should be conserved. It is now the question whether this genus to be conserved should be *Entoloma* or *Rhodophyllus*. Only one author has thus far taken up *Entoloma* as generic name for the whole group sensu lato and this at a time when the *Acurtis* question was still being ignored. He (Dennis) has since then changed his mind (1960). All specialists and all those mycologists who have given special attention to the taxonomy of the genus have used the name *Rhodophyllus* so that combinations in *Rhodophyllus* are available for nearly all species of any importance. A very large number of transfers would have to be made if *Entoloma* were to be conserved. The inconvenience to have a conserved *Rhodophyllus* replacing one of the Fries-Saccardo genera can easily be avoided by conserving *Rhodophyllus* with the type species *Rhodophyllus parkensis* (Fr.) Quél. This, even for those in favor of retaining the small genera of the Friesian school, would be a blessing rather than an inconvenience because the group now separable under *Eccilia* whether as subgenus or as genus cannot be satisfactorily typified by those who consider Kummer's agaric genera not as new genera but as based on a Friesian basonym so that this important group is virtually without a legal name, a difficulty which is particularly felt by those who prefer to distinguish *Eccilia* as a genus different from *Entoloma, Nolanea, Leptonia,* and/or *Claudopus*. This difficulty will be overcome once *Rhodophyllus* is conserved in the manner here proposed. We still have to deal with two arguments against conservation of *Rhodophyllus* which have come up during the last twelve years. One is that *Rhodophyllus* is a homonym of the alga *Rhodophyllis* (and Rhodophyllaceae of Rhodophyllidaceae). For anybody who has even a vague knowledge of Greek, it is quite clear that phyllis (gen. phyllidis) is a different word with different meaning as compared with phyllus (from phyllon); furthermore, there is no danger of confusion since *Rhodophyllis* is a saltwater-inhabiting alga! Likewise, the Code seems to take this sort of difference in generic names as an example of genera which should not be considered as orthographic variants even if they were derived from an identical root. The last argument against *Rhodophyllus* is that it represents a parallel case to *Drosophila*, a genus whose conservation has been rejected. It may only be said that the case is not parallel

since *Drosophila* is used only in a single book in flagrant violation of the International Code, i.e. after and before an acceptation of that name by conservation had been or will be rejected. All other authors use other generic names, most of them *Psathyrella*. There is not a large number of species to be transferred if *Drosophila* is not conserved, on the contrary, transfers would become necessary for all extra-European species once *Drosophila* were legalized. And furthermore neither *Drosophila* nor *Psathyrella* are threatened by an older synonymous generic name like *Acurtis* in the case of *Rhodophyllus* which makes action necessary and urgent.

Our proposal is therefore the following: To enter in the list of Genera Conservanda: *Rhodophyllus* Quél., Enchiridion p. 57, 1886 with the nomenclatorial type *Rhodophyllus parkensis* (Fr.) Quél.

Proposed by: Rolf Singer (Tucumán).

NEWS AND NOTES

JOHANNES ÁSKELSSON 1902—1961

The Icelandic geologist and paleobotanist Jóhannes Áskelsson died of an heart attack in Reykjavík on January 16. He was the first Icelandic scientist to study the remarkable plant fossils that had previously only been preliminarily investigated by Oswald Heer, and he was able to demonstrate that though most of these fossils are older than thought by Heer and probably from early Eocene, some are younger and may form an almost complete series reaching up through the interglacials. Áskelsson was an inspiring teacher and enthusiastic traveller and the author of more than forty well-composed papers, mainly on Icelandic paleobotany.

Áskell Löve

NOTE ON THE NOMENCLATURE OF FUNGI AND, INCIDENTALLY, OF GANODERMA LUCIDUM

Vassilkov's note on the proposals concerning the nomenclature of fungi (Taxon 9(9): 265-266. 1960) merits careful meditation, specially in what concerns the deletion of Recommendations 46A and 50D.

Before suggesting or approving such a deletion one should consider what it would imply and the consequences entailed.

It is fitting to draw attention, I feel, to the fact that the position in regard to non-phanerogamous plants is very different from that of the phanerogams. Whilst for the latter Linnaeus' publications were real starting points, because he invented the latin binomial system, or at least officialized it, with Fries the position is entirely different.

Many authors applying the binomial system had preceded him and many valuable contributions to the nomenclature of fungi, excellently illustrated, had been published, and of these Fries took full advantage. It then appears that the deletion of the above recommendations would run counter the aims of taxonomy and typification, inasmuch as Fries has not left types of many of the names he adopted. If his publications have been adopted, for good or .. debatable reasons, as one of the starting points in the nomenclature of fungi, the application of the binomials he has used needs sometimes, indeed often, to be precised.

To support my contention I would like to point out a case in point. In the study of the genus *Ganoderma*, on which I have been working for the last 7 or 8 years, I have been able to determine the type of *G. lucidum*. This type is plate no. 224 of William Curtis's Flora Londinensis published in 1781. The latter published the binomial *Boletus lucidus* accompanied by a diagnosis written in latin and english. From the text that follows it is patent that Curtis intended publishing a new binomial. Von Leysser, referring to Curtis, took up the name and published it in Flora Halensis no. 1245, p. 300, 1783. It is indeed worth remarking that no mention is made of the binomial in the first edition of the Flora Halensis published in 1761.

This establishes definitely that the publication by Von Leysser of *Boletus lucidus* is nothing else than a citation.

Subsequent authors have lost sight of the original author and the binomial *Polyporus lucidus* (Von Leysser) Fries has come to be used exclusively. I have not seen Curtis's name mentioned in connection with this binomial, except in Fries and pre-Friesian authors, and in one later case, that of Murrill. This is undoubtedly a very regrettable omission and it is indeed a mistake to confer

on Von Leysser the authorship of the binomial for this conceals several facts: 1°) Curtis coined the name 2°) Curtis' plate is an excellent holotypus 3°) The region of London is the type locality. The citation of authors' name accompanying the binomial should therefore be: *Ganoderma lucidum* (W. Curtis ex Fries) Karsten:

I feel, that in this case and in similar ones when the type is implied it is essential that the pre-Friesian author be mentioned.

In cryptogamy we are beset with greater difficulties in the typification of taxa than in phanerogamy. Therefore, every rule or recommendation that helps towards the fixation of a holotypus should be kept. Even further, I am strongly in favour of suggesting that the provisions of recommendation 46A and 50D be embodied in a rule.

This, of course, takes for granted that Fries' Systema Mycologicum 1821 remains the starting point for the nomenclature of the *Fungi caeteri*. But, perhaps a better conclusion might be reached, and that would be to harken to what G. W. Martin suggested in "Starting points for fungi" (Taxon 9(1): 1-3. 1960).

Finally a remark concerning Vassilkov's suggestion of discarding the word *ex*. My feeling is that the fact that this word has been misapplied or used wrongly by a group of modern authors is not a good reason for discarding it. To do so would be to open the door to sanctioning many other malpractices. In taxonomy we must be guided by the principle that precision is paramount to all other considerations and I feel strongly that dropping the name of pre-starting point authors would be going against this principle.

R. L. Steyaert (Bruxelles)

THE GENERIC NAME SCHIMA

The action of the General Committee (Taxon 9: 22. 1960) in refusing to accept the majority finding of the Committee for Spermatophyta (Taxon 9: 15, 17. 1960) in regard to the generic name *Schima* Blume (*Theaceae*) (1825) indicates a lack of appreciation of Article 41 (I.C.B.N. 1956).

There can be no doubt that the article is intended to cover those numerous cases in which authors have described either a new genus with one new species, or one new species in a new genus, by means of a combined description covering both categories. New genera with more than one new species are implicitly excluded and there is no provision in it for any situation outside its explicit terms. Certainly there is no provision for the case of a genus in which one species only is described (and its name published) whilst the author at the same time admits the existence of another species in the same genus.

Prior to 1823, Reinwardt had listed without description a new genus and species under the name *Schima noronhae* Reinw. and in 1823 Blume (Cat. Gew. Buitenzorg 80) also listed this species and added a second new species *S. excelsa*, the latter being provided with a brief description which is entirely specific* and contains no word or phrase which might serve to distinguish the genus. It is evident that Blume did not regard the genus as new, since he provided no generic description; all the new genera listed in his catalogue were given descriptions (pp. 8-27), but new species in old genera were given specific diagnoses in footnotes. It is therefore clear that Blume was not describing a "monotypic new genus" when he gave his diagnosis of *Schima excelsa*. Article 41 cannot be applied, and the generic name *Schima* was not validly published.**

In 1825 the position changed. Blume realized that his *Schima excelsa* of 1823 in fact belonged to the genus *Gordonia* Ellis (1770), to which he transferred it, and he then described Reinwardt's *Schima*, with *S. noronhae*. These names were validly published in Bijdr. Fl. Ned. Ind. 3: 129 (1825).

The conclusion that *Schima* Reinw. ex Blume (1825) is not a later homonym is inescapable and the name is perfectly safe without conservation. The original proposal to conserve the name was made by van Steenis (Taxon 2: 115. 1953) and two Spermatophyta committees have (by majority votes) refused to admit the necessity for conservation. It must be clearly understood that the terms of Article 41 do not limit the meaning of the term "monotypic genus" to "genus in which only one species of two or more has been described". It must be liter-

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* *Schima excelsa* Bl. — S: arbor egregia; foliis alternis breviter petiolatis oblongo-lanceolatis acuminatis inferne attenuatis denticulatis laurinis; floribus in extremis foliorum axillis solitariis, gemmis subulatis sericeis.

** Since the generic name *Schima* was not validly published, it may be noted that the specific name *Schima excelsa* Blume (1823) also was not validly published (Art. 42, I.C.B.N. 1956).

ally interpreted to mean a genus taxonomically limited (at the time of publication) to one species.

A. A. Bullock (Kew)

TWO RAFINESQUE ORCHID GENERIC NAMES

In the course of preparing references for inclusion in Index Nominum Genericorum I came across two generic names proposed by Rafinesque which require further consideration.

Digomphotis *Rafinesque,* Fl. Tell. 2: 37. 1837.

Lectotype species: *D. undulata* Rafinesque, nom. illeg.

Two species are mentioned as belonging to this genus, namely, *D. cordata,* based on *Orchis cordata* Willd. (*Habenaria cordata* (Willd.) R. Br.), and *D. undulata,* based on *Habenaria goodyeroides* Don. The first of these names is a synonym of *Satyrium diphyllum* Link which is the basis of *Gennaria diphylla* (Link) Parl., the type species of *Gennaria* Parlatore. The second of Rafinesque's species is by common consent referred to *Peristylus* Blume. If, therefore, the first of these species is adopted as the type of the generic name *Digomphotis* this latter name will replace *Gennaria* as the correct name of this Mediterranean genus. In order to avoid this undesirable change I therefore formally select *D. undulata* Rafin. as the type species of his genus which then becomes congeneric with the earlier *Peristylus* Blume.

Dilomilis *Rafinesque,* Fl. Tell. 4: 43. 1838.

Type species: *D. serrata* Rafinesque, nom. illeg. [Syn. tax.: *D. montana* (Swartz) Summerhayes (*Epidendrum montanum* Swartz)].

Syn. *Octadesmia* Bentham in Journ. Linn. Soc. Lond. 18: 311. 1881, et in Bentham & J. D. Hooker, Gen. Pl. 3: 525. 1883.

Rafinesque's and Bentham's generic names are both based on the same species, namely, *Octomeria serratifolia* W. J. Hooker, and consequently *Dilomilis* is the correct name for the genus concerned. Although Bentham was apparently unaware that Rafinesque had already given a name to his new genus *Octadesmia* the compilers of the original Index Kewensis included both names, pointing out that *Dilomilis* Raf. is earlier! No proposal for conservation of *Octadesmia* has been put forward and there seems no adequate reason for conserving the name of such a small and unimportant genus. I therefore make below the necessary combinations under the correct name *Dilomilis.*

1. **Dilomilis montana** (*Swartz*) *Summerhayes,* comb. nov.
   Epidendrum montanum Swartz, Prodr. 121. 1788.
   Octomeria serratifolia W. J. Hooker, in Curtis, Bot. Mag. 55: *t.* 2823. 1828.
   Dilomilis serrata Rafinesque, Fl. Tell. 4: 43. 1828.
   Octadesmia montana (Swartz) Bentham, in Bentham & J. D. Hooker, Gen. Pl. 3: 525. 1883.
2. **D. elata** (*Bentham*) *Summerhayes,* comb. nov.
   Octadesmia elata Bentham, in Bentham & J. D. Hooker, Gen. Pl. 3: 525. 1883.
3. **D. nodosa** (*Cogniaux*) *Summerhayes,* comb. nov.
   Octadesmia nodosa Cogniaux, in Urban, Symb. Antill. 7: 179. 1912.
4. **D. scirpoidea** (*Schlechter*) *Summerhayes,* comb. nov.
   Octadesmia scirpoidea Schlechter, in Urban, Symb. Antill. 7: 494. 1913.
5. **D. oligophylla** (*Schlechter*) *Summerhayes,* comb. nov.
   Octadesmia oligophylla Schlechter, in Fedde, Repert. Spec. Nov. 21: 336. 1925.

V. S. Summerhayes (Kew)

COMMELINA LONGIFOLIA Lam. and C. SALICIFOLIA Roxb.

Nothing is clearly known regarding the type of *Commelina salicifolia* Roxb. There are, however, coloured drawings among the Roxburgh Icones, one at the Calcutta Herbarium, and the other at Kew.

During the scrutiny of Lamarck's specimens in the Paris Herbarium, the type of *Commelina longifolia,* which bears Lamarck's label indicating it as Commerson's collection from Java, was sorted out by the writer. For help and a photograph of the type, the writer is greatly indebted to Dr. M. J. Leandri, Sub-Director of the Paris Herbarium. This species, which proves to be identical with *C. salicifolia* Roxb., was well described by Lamarck on the basis of Commerson's collection. Subsequently, Vahl (*Enum.* 2: 166. 1805) elaborated this description, on the basis of a

specimen received from Lamarck. For a photocopy of this the writer is greatly indebted to Dr. A. Skovsted, Curator of the Botanical Museum at Copenhagen; it shows clearly that the plant is not the same as that in Lamarck's own herbarium: it is not *C. salicifolia* Roxb. The extended description which Vahl gave under the name *C. longifolia* Lam. must therefore be disregarded; it matches very well with *C. forskalaei* Vahl. C. B. Clarke in his monograph on the family (in DC. Mon. Phan. 3. 1881) kept this species of Lamarck under *species mihi ignotae* as he had not seen the type. Lamarck's specimens, which remained in Germany for a long period, were acquired by the Paris Herbarium in November 1886 in loose unmounted state; they had not been available to Clarke or other workers before that date.

On Lamarck's type sheet, besides one long and good specimen of *C. longifolia*, there are two small bits of specimens mounted on either side of the good specimen; these are similar to *Commelina albescens* Hassk. *C. albescens* has so far not been recorded from Java and evidently these bits were not with the specimen of *C. longifolia*, as Lamarck did not include any characters from them while describing *C. longifolia*. These pieces may be Commerson's collection from Mauritius which got mixed up while loose specimens of Lamarck were being mounted at the Paris Herbarium after their return from Germany. A few instances of such mixing up of species whose identity was quite clear to Lamarck were observed by the writer in Lamarck's collections.

The correct name for this species is therefore:

Commelina longifolia Lam., Ill. Gen. 1: 129 (1791).

Syn.: *C. salicifolia* Roxb. [Hort. Beng. 4: 1814 nomen nudum] Fl. Ind. 1: 176 (1820); C. B. Clarke in DC. Mon. Phan. 3: 157 (1881); Hook. fil., Fl. Brit. Ind. 6: 370 (1890).

This species has so far been recorded from Peninsular India and Eastern India and also from Malaya and Java.

The writer expresses his grateful thanks to Mr. B. L. Burtt for his critical suggestions and to Dr. J. C. Sen Gupta for his encouragement.

Seshagiri Rao Rolla (Poona)

NATIONAL SCIENCE FOUNDATION

The Division of Biological and Medical Sciences of the National Science Foundation announces that the next closing date for receipt of basic research proposals in the life sciences is January 15, 1962. Proposals received prior to that date will be reviewed at the spring meeting of the Foundation's advisory panels and disposition will be made approximately four months following the closing date. Proposals received after the January 15, 1962 deadline will be reviewed following the summer closing date of May 15, 1962.

Inquiries should be addressed to the Biological and Medical Sciences Division, National Science Foundation, Washington 25, D.C.

*

On November 1, 1961, after six very pleasant years of association with Longwood Gardens, Kennett Square, Pennsylvania, Walter H. Hodge is leaving to assume new duties as Consultant in Tropical Biology with the Division of Biological and Medical Sciences of the National Science Foundation, Washington, D.C.

CONTEMPORARY BOTANICAL THOUGHT

Contemporary botanical thought, edited by Anna M. MacLeod and L. S. Cobley. Published for The Botanical Society of Edinburgh by Oiver and Boyd, Edinburgh and London, 1961, 197 pp., xii plates, price 30 s. net.

The Botanical Society of Edinburgh publishes in this book the texts of a series of lectures in which it was tried to give an overall survey of the present state of botanical thought. The introduction is by the two editors, and the papers on the various branches of botany are by C. W. Wardlaw (morphology), J. S. L. Gilmour (taxonomy), K. Mather (genetics), E. J. H. Corner (evolution), A. S. Watt (ecology), N. F. Robertson (mycology), M. Thomas (physiology), I. Manton (plant cell structure).

NEW I.D.C. MICROFICHES

Baker, E. G. — The leguminosae of tropical Africa. Ghent 1926 ($ 8.50).

Bateman, E. — The effect of Concentration on the Toxicity of Chemicals to living organisms. USA Dept. of Agric. Wash. 1933. Technical Bulletin, 346 ($ 0.50).

Botanical gazette, The. — Ed. J. M. Coulter. Hanover, Indiana, USA. V. 1-23, 1875-1897 ($ 69.00).

Bunge, A. — Anabasearum Revisio. 102 p. (Mém. de l'Ac. d. Sci. Petersbourg. Sér. 7. Vol. 4. 1862) ($ 1.50).

Candolle, A. P. de — Regni Vegetabilis Systema Naturale. 2 Vols. Paris 1818-21 ($ 12.00).

Candolle, A. P. de, & Lamarck, J. B. de — Flore Française, ou descriptions de toutes les plantes qui croissent naturellement en France. Paris 1815. 6 Vols. ($ 29.00).

Clementi, J. — Sertulum orientale seu recensio plantarum in olympo Bithynico.... (Mém. d. R. Ac. di Torino. V. 16, 1855) ($ 1.50).

Description de l'Egypte — Vol. 2. Histoire Naturelle, Mémoires par: Delile, Girard, Rozière, Saint-Hilaire etc. Paris 1812 ($ 11.00).

Dixon, H. N. — Report on the Mosses of the Abor Exped., 1911-1912. Records of the Botanical Survey of India. Vol. 6(3). p. 57-73, 2 pl. 1914 ($ 0.50).

Feldman, & Hamel — Observations sur quelques Gélidiacées. (Revue Générale de Botanique, Vol. 46, 1934. p. 528-594) ($ 0.50).

Forster, G. — Herbarium australe seu catalogus plantarum exsiccatarum quas in florule.... Gottingae 1797 ($ 0.50).

Grant, Oliver & Baker — The Botany of the Speke and Grant Expedition. Transaction, Lin. Soc. V. 29, 1875 ($ 6.00).

Gray, S. F. — A natural arrangement of British plants according to their relations to each other, as pointed out by Jussieu, de Candolle, Brown, ... London 1821.

Grisebach, A. H. R. — Flora of the West Indian Islands. xvi + 789 p. London 1864 ($ 7.00).

Hoffmann, O. — Compositae. (A. Engler & K. Prantl: Die natürl. Pfl. familien. Vol. 4, 1897. pp. 87-402. (printed December 1889) ($ 4.50).

Hooker, J. D. — The Botany of the Antarctic Voyage with the Erebus and Terror, 1839-43. Part III. FLORA TASMANIA. 2 Vols. ($ 23.00).

Humboldt, A., Bonpland, A., Kunth, C. S. — Nova Genera et Species Plantarum. 7 Vols. 700 tables. Lutetiae Parisiorum 1815-1825 ($ 69.00).

Jussieu, A. L. — Genera Plantarum secundum ordines naturales disposita.... (24), lxxij, 498 p. Paris 1789 ($ 5.50).

Linnaeus, Carolus — Systema Plantarum Europae, exh. characteres.... Ed. Gilibert. Coloniae 1785-87. 7 Vols. 8°. ($ 30.00).

Linnaeus, C. — Genera Plantarum. Ed. 8. (J. C. D. Schreber). 2 Vols. Frankfurt 1789-91 ($ 8.00).

Linnaeus, C. — Genera Plantarum. Ed. 9. 2 Vols. 870 p. Göttingen 1830 ($ 8.00).

Presl, C. B. — Flora Sicula, exh. plantas Vasculosas. Prague 1826. xlvi + 217 p. ($ 2.50).

Rendle, A. B., Baker, E. G., Moore, S. — Catalogue of the plants collected by Mr. & Mrs. Talbot in the Oban district S. Nigeria. X, 153, (5) p., 17 pl. London 1913 ($ 2.50).

Rivinus, A. Q. — Ordinus Plantarum quaefunt Flore Irregulari Monopetalo. Lipsiae, 1690-99. 3 Vols. Folio ($ 14.00).

Roemer, Johann Jacob — Collectanea ad omnem rem botanicam spectantia. Turici, (Gessner) 1809. 314 p. (Contents), 2 tabulae ($ 4.00).

Roth, A. W., Novae Plantarum Species Praesertim Indiae Orientalis, ex collectione Doct. Benj. Heynii. Halbestadii 1821 ($ 3.50).

Sibthorp, J. — Flora Graeca, sive plantarum rariorum Historia, quas in Provinciis aut insulis Graeciae. London 1806-40. 10 Vols. ($ 35.00).

Schrader, H. A. — Spicilegium Florae Germanicae. (8), 194 p., 4 fig. Hannover 1794 ($ 2.00).

Schreber, J. C. D. von — Beschreibung der Gräser. 3 Vols. Leipzig 1769-79 ($ 7.50).

Taylor, T. — New Lichens. (The London Journal of Botany, Ed. W. J. Hooker. V. 6-1847. p. 148-199) ($ 0.50).

Tineo, V. — Catalogus plantarum horti Regii Panormitani ad annum 1827 ($ 3.00).

Tineo, V. — Plantarum rariorum Siciliae minus cognitarum. fasc. 1-3. p. 48. Palermo 1846. 23 cm. ($ 0.50).

Willdenow, C. L. — Hortus Berolinensis, sive icones et descriptiones, plantarum rariorum.... Fasc. 1-10. 108 pl. Berolini 1803-1816 ($ 10.00).

Woronow, J. — Materiaux pour la connaissance de Lilacees du Caucasus.... Bull. Jard. Princ. USSR. Vol. 26, 1927 ($ 0.50).

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INTERNATIONAL ORGANIZATION OF BIOSYSTEMATISTS

Report by

V. H. Heywood (Liverpool) & A. Löve (Montreal)

As a result of discussions held at joint sessions of Sections 2 and 9 of the IXth International Botanical Congress in Montreal in August, 1959, it was proposed that a Committee be appointed by the I.U.B.S. to consider terminology and related problems in the field of biosystematics. The Council of the I.A.P.T., as section for Plant Taxonomy of the I.U.B.S., therefore decided to appoint a Committee on biosystematic terminology (see *Taxon 9*: 88 (1960)).

International Committee for Biosystematic Terminology

The first meeting of the International Committee on Biosystematic Terminology was held in Copenhagen, Denmark, from September 7th—14th, 1960. Those present were: T. W. Böcher (Copenhagen), Claude Favarger (Neuchâtel), W. Gajewski (Warsaw), Harlan Lewis (Los Angeles), Askell Löve (Montreal), Börje Lövkvist (Lund), D. H. Valentine (Durham). B. Lövkvist and D. H. Valentine were elected and co-opted as members of the Committee. V. H. Heywood (Liverpool) who had acted as Secretary by appointment of the Chairman, was elected to this function. Both he and H. Merxmüller were involved in an accident just before the meeting and were unable to attend. The following report on the meeting was compiled by the Chairman, Askell Löve.

I. *Terminology*

(1) *The aims and purpose of biosystematics and its subdivisions*

All the members were of the opinion that biosystematics and its subdivisions, cytotaxonomy and experimental taxonomy s.str., are to be regarded as an approach to taxonomy employing the methods of cytology and genetics to its problems, and not as a replacement of classical taxonomy. It was mentioned, however, that in many cases biosystematic studies show little or no relation to taxonomy since they may be directed towards studies of the mechanism of evolution. It was also pointed out that one ought to recommend that taxonomic conclusions be drawn from biosystematic information. The members were of the opinion that the taxonomic categories commonly used are sufficient also from biosystematic points of view, save from some preliminary terms discussed below.

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(2) *The name of the approach*

In this connection the name of the approach was discussed thoroughly. It was pointed out that although the terms biosystematics and experimental taxonomy are often used as if they were mutually interchangeable, this is not always so, since most cytotaxonomy is observational and cannot logically be termed experimental. A new term may be the solution, although the committee agreed that coining of new terms was not to be recommended at present. Since the term biosystematics can also be used as an adjective, it is to be recommended as the general term for the approach.

(3) *Terminologies*

In a discussion of the special and all-embracing terminologies such as those of Turesson, Camp, Gilmour, and others, it was pointed out by Valentine that there are in use good and bad terms, an example of the latter being "biological species". The terminology of Camp and Gilly has not been used by others, thus suggesting that there is no need for it. It was also pointed out by Lewis, in connection with a discussion of the "deme" terminology of Gilmour and some other British botanists, that there is apparently no need for these terms either, since they are used only by a few, and people seem to prefer common and wider terms like "race" and "population". Even these two terms are, according to Böcher, rather difficult for scientists speaking languages other than English since the difference between them is not well defined. This could, however, be remedied by means of some recommendation from this Committee.

Two terms rather commonly used, and misused, are "line" and "strain". It was pointed out by Böcher that the former ought to be restricted only to mainly homozygous autogamous populations, whereas the latter ought to be used only for more or less homozygous populations of allogamous plants.

The ecotype terminology of Turesson was discussed in greater detail, since it is being most widely used and has been found to be more useful than any later proposed systems. Although Valentine expressed the opinion that there is a need for the terms "ecospecies" and "coenospecies" that tell about potential compatibility and interfertility, this view did not receive unanimous support, and Lewis felt it would be better to express this information in a sentence than in a term understandable only to a few. However, the term "ecotype" was regarded as very useful, although it is at present used in many meanings, of which three definitions have been furnished by Turesson himself. The committee agreed that the most useful definition of the ecotype to be preferred is the first one proposed by Turesson when he coined this term "to cover the product arising as a result of the genotypical response of an ecospecies to a particular habitat". It was felt that there is a need for the term in this meaning although it often is replaced by more wide or common terms like "ecological race" or "geographical race". In this connection, Lövkvist mentioned that in Sweden the restricted use of the term ecotype has resulted in the replacement of the expressions "alpine and lowland ecotype" with "alpine and lowland races", a trend to be recommended.

In continuation of the discussion of the ecotype terminology the use of the words "chromosome races", "polyplotypes", "cytotypes", etc. was discussed. It was agreed that although there is a need for some term to designate polyploids that have not yet been separated morphologically, none of the terms in use is neutral or good enough. Valentine expressed the opinion that if a neutral term could be coined and achieve acceptance, this would serve the purpose. To this end, a term like "cyton", formed in much the same way as "taxon", was mentioned, but the committee did not feel it ought to propose such a term at present.

As a summary of these discussions it was pointed out that biosystematists ought to avoid using a jargon understandable by only a few. The committee does not want to rule against the use of "bad" terms, although it would like to recommend terms to be preferred and restrict their number drastically. Highly specialized terms and language is to be avoided, although some terms are always needed. The committee wants to focus attention on the selection of certain terms, but at present it is not ready to decide on these points, only to point out the problems with some of the difficulties. It is hoped, however, that during the next few years these difficulties can be overcome.

(4) *A glossary of useful or necessary terms*

In continuation of the discussion of terms it was agreed that there is a need for the compilation of a glossary of terms now in use, with definitions and reference to their first occurrence. On basis of such a compilation, the committee could probably make up its mind and publish a list of these terms with indications and recommendations of those to be preferred. Lövkvist said that he already had made a preliminary list of such terms, and promised to add to it, by aid of a British list, and circulate the manuscript among the members of the committee.

II. *The need for better communication between biosystematists*

In addition to the terminological discussion referred to above, much was said about the need for better communication between biosystematists in general and between them and classical taxonomists in particular, and also about the need for information about topics under study at different institutions. It was unanimously agreed that there is a need for an International Organization of Biosystematists; at the same time as a wholly independent organization would not be advisable. It was therefore decided that such an organization ought to be formed as a section of the International Association for Plant Taxonomy and a subsection of the International Union of Biological Sciences in much the same way as the International Organization of Palaeobotanists. The following resolution was passed:

"The committee proposes the formation of a Section for Biosystematics of the International Association for Plant Taxonomy. This section would be open to all persons working with or interested in biosystematics.

The objects of the section would be:

(1) To promote international co-operation in the study of biosystematics.
(2) To arrange regular publication of information on biosystematics, to be distributed to members of the section.
(3) To consider the formation of a centre at which biosystematic data could be assembled and organized in the form of a card index, which would be available to members.
(4) To arrange conferences and excursions for the study of biosystematics.

The section, if approved, would be organized in co-operation with the executive of the I.A.P.T. and would be comparable in its organization with the existing International Organization for Palaeobotany".

International Organization of Biosystematists

Following the directives of the Copenhagen Meeting, the Chairman of the Biosystematics Committee submitted the proposals concerning the Organization of Biosystematists and its liaison with I.A.P.T. to the Executive of the latter.

The following members of the Committee on Biosystematic Terminology were constituted as the first executives of the International Organization of Biosystematists (I.O.B.): President, A. Löve (Montreal); Vice-President, T. W. Böcher (Copenhagen);

Secretary-General, V. H. Heywood (Liverpool); Members: C. Favarger (Neuchâtel), W. Gajewski (Warsaw), H. Lewis (Los Angeles), B. Lövkvist (Lund), H. Merxmüller (München), D. H. Valentine (Durham).

After preliminary correspondence the Council and Executive of the I.A.P.T. agreed to the proposed link with the I.O.B. and accepted it as the Committee on Biosystematics of the I.A.P.T. with the same executive as above.

Annual Fees

The fee to the I.A.P.T. All members of the I.O.B. (which is the name of the membership under the Committee on Biosystematics of the I.A.P.T.) must automatically become members of the I.A.P.T. and pay its regular fees. All former members of the I.A.P.T. will also be allowed to become members of the I.O.B.

Publications

Members of the I.O.B. will receive free all the publications so received by the regular members of the I.A.P.T. (e.g. Taxon — the news bulletin of the I.A.P.T.) and other publications at a reduced price. The members will be allowed to publish reports and papers in the normal channels of the I.A.P.T.; the publication of special reports will be undertaken by the I.A.P.T. in the same manner as is done for the International Organization of Palaeobotanists.

Liaison with the I.U.B.S.

Application has been made to the I.U.B.S. to have the I.O.B. accepted as a committee of that organization, as is the International Organization of Palaeobotany.

Report on the first Meeting of the I.O.B. Executive, held in Neuchâtel, 29th—31st May, 1961

Advantage was taken of the fact that several members of the Executive were attending the Flora Europaea Symposium in Genova in May, 1961, to hold a short meeting subsequently in Neuchâtel. The arrangements were made by Professor Claude Favarger in whose Institute the meeting took place. Those attending were: Askell Löve (President), Tyge W. Böcher (Vice-President), V. H. Heywood (Secretary-General), Claude Favarger (Neuchâtel), B. Lövkvist (Lund), H. Merxmüller (München). C. Cook (Liverpool and München) was invited to attend as observer.

The opening session was largely devoted to considering questions of the constitution and development of the I.O.B. It was decided that the scope of biosystematics is best indicated by listing the activities which it embraces. These were principally experimental taxonomy, cytotaxonomy, cytogeography, genecology, biometry, microevolutionary studies, speciation. The following also closely infringe on the field of biosystematics: comparative developmental physiology, comparative phytochemistry, comparative embryology. Similarly autecological studies are frequently best regarded as of a biosystematic nature. It was emphasized, particularly by Böcher, that biosystematic studies need not necessarily be directed towards taxonomic ends, although most members felt that whenever possible biosystematic data should be related to a taxonomic framework. It was suggested by Heywood that it should be regarded as a *practical* aim of biosystematists to relate the facts obtained to a taxonomic scheme — perhaps in the form of a special classification — although it is not necessarily their *primary* aim to make new and improved taxonomic classifications.

Böcher drew attention to the new term *poeciliology* which he had proposed in a recent paper (*Bot. Tidskr.* 56: 317—335 (1961)) to cover the study of variations, but it was felt that the term was too unusual to meet with wide approval. After considering a draft constitution and statutes for the I.O.B., the Committee went on to consider the membership campaign. It was decided to send out literature outlining

the scope and activities of the I.O.B. to as many botanical centres as possible throughout the world.

As noted at Copenhagen, one of the major problems in biosystematics (as in other branches of science) is that of achieving effective co-operation, communication and co-ordination of activities on an international scale. It was therefore decided to set up a registration centre whereby information on biosystematic activities, particularly of groups being studied, could be assembled and in due course made available to all concerned. To this end a questionnaire is being drawn up requesting information on groups being studied, work being planned, etc. in the field of biosystematics, and copies will be sent to all appropriate institutes for completion. The information contained in the completed questionnaires should form the basis for a card index which it is hoped to maintain permanently and revise every one or two years. It is hoped, too, that it will be possible to publish, in a cheap form, the assimilated information so that it will be readily accessible to all members of the I.O.B. The possibility of using I.B.M. punch cards as a means of recording the data is being investigated. Whenever possible the information from national biosystematic card indexes will be incorporated in the system.

At the same time a start will be made in exploring the possibilities of abstracting and indexing already published data. This is clearly a much greater task, requiring considerable resources.

Another matter considered was the difficulty often experienced in obtaining seed and other material for biosystematic work. As a first step a list is being compiled of all Botanic Gardens and Institutes which offer spontaneous seeds. This list will be sent to all members of the I.O.B. so that they will at least have an indication of possible sources of material. The general question of the availability of spontaneous seed and methods of listing it was discussed, and an approach will be made to the International Association of Botanic Gardens with a view to further improvements.

The last subject discussed was the preparation of a glossary of biosystematic terms, as envisaged at Copenhagen. A preliminary list prepared by Lövkvist was considered, and after general principles had been decided on it was agreed to produce a further, more complete version. At a future meeting the proposed terms would be debated and a selection made of them to be recommended for future use.

In conclusion, acknowledgement must be made of the generous hospitality afforded to the participants by Professor and Mme Böcher and the University authorities in Copenhagen, and by Professor and Mme Favarger, the University and the Service cantonal des forêts in Neuchâtel. It is kindnesses such as these which greatly ease the difficulties of preliminary meetings of a new organization. Both meetings were held in a cordial atmosphere and the Committee feels confident that from the spontaneous seed sown in Montreal, Copenhagen and Neuchâtel there will arise a vigorous, expanding and, may one say, outbreeding population allowing for cross-fertilisation of ideas.

SUMMARY

The International Organization of Biosystematists has been established to promote co-operation in the study of biosystematics and to facilitate the publication and exchange of information on this subject. The I.O.B. constitutes the Committee on Biosystematics of the International Association for Plant Taxonomy (I.A.P.T.-B) and is open to all persons working or interested in the field of biosystematics.

Membership fees are the annual fees to the I.A.P.T. since all members of I.O.B. are at the same time regular members of the I.A.P.T. Existing regular members of the I.A.P.T. are invited to apply to the Secretary-General for membership in the I.O.B. if their interests lie in the field of biosystematic studies.

Biosystematics is interpreted in a broad sense to include subjects such as experimental taxonomy, genecology, cytotaxonomy, micro-evolutionary studies and speciation. Autecologists, comparative phytochemists, developmental physiologists and others interested in any field relevant to biosystematics are also invited to apply for membership. It is emphasized that the I.O.B. is concerned with such studies in all groups of the Plant Kingdom so that it is hoped that algologists, mycologists, microbiologists and bryologists will play a full part in the Organization.

A report is given of the first meetings of the I.O.B. Executive Committee, at which the following activities were planned:

1) The establishment of a registration centre at which biosystematic data and details of work in progress can be assembled and made available to all members.
2) The establishment of a system to expedite the acquisition of living plant materials for biosystematic work.
3) The preparation of a glossary of biosystematic terms.

The Bureau is at Liverpool, and correspondence should be addressed to the Secretary-General, International Organization of Biosystematists, The University, Liverpool, 3, England.

A WRONG EXAMPLE IN ARTICLE 62 OF THE INTERNATIONAL CODE OF BOTANICAL NOMENCLATURE, 1956

H. P. Fuchs, Wassenaar (Neth.)

Article 62 of the 1956 edition of the International Code of Botanical Nomenclature which was not changed in its wording during the ninth botanical Congress in Montreal [cf. LANJOUW 1959, Synopsis of Proposals. — Regnum Veget. 14: 61 (January 1959); LANJOUW 1960, IX. International Botanical Congress — Nomenclature Section. — Regnum Veget. 20: 84 (December 1960)] reads as follows:

"A l e g i t i m a t e [spaced by the author] name or epithet must not be rejected merely because it is inappropriate or disagreeable, or because another is preferable or better known, or because it has lost its original meaning."

This is followed by a number of examples to which PROKHANOV 1958, Proposal no. 207. — in Taxon 7(9): 271 [12 November 1958] added a few more, still. however, only illustrating the first paragraph. Amongst the original examples the generic name *Alexitoxicum* appears. There is no doubt that SAINT-LAGER 1880, in Ann. Soc. bot., Lyon 7: 67 in an article "*Réforme des noms composés d'un radical grec associé à un radical latin*" changed the generic name *Vincetoxicum* into *Alexitoxicum* merely because he considered the former as a combination of a Latin and a Greek word [1]): "En vertu de ce principe si bien formulé par Linné on doit proscrire de la nomenclature botanique tous les noms hétérogènes. C'est ainsi qu'il faut rejeter, par exemple, le mot hybride *Vincetoxicum*, formé par l'association du verbe latin *vincere* avec le substantif grec *toxicon*. Il est du reste facile, en imitant le mot grec *Alexipharmacum*, de composer le substantif *Alexitoxicum*, qui a le même sense que *Vincetoxicum*." As far as this goes *Alexitoxicum* would be a striking example illustrating the meaning of Article 62, especially because no author's name is cited behind the generic names. Neither from the original publication of SAINT-LAGER nor from the reference cited as an example to Article 62 of the Int. Code

1) The footnotes are placed at the end of the Article [Ed.].

Bot. Nomencl. does it become clear whether SAINT-LAGER intended to replace the specific name "*Vincetoxicum*" from the binomial *Asclepias Vincetoxicum* LINNAEUS 1753, Spec. Plant., ed. 1, 1: 216, n. 12 or one of the two existing generic names *Vincetoxicum* TH. WALTER 1788, Fl. Carol.: 13/104 and *Vincetoxicum* [N. M. VON WOLF 1780, Gen. Plant. vocab. charact. def.: 130, pro syn.] F. C. MEDIKUS 1790, in Hist., Comment. Acad. Elect. Theod.-Palat., Mannheim., phys. 6: 404[2]). That the new name "*Alexitoxicum*" was meant to replace the latter is illustrated, however, by a later publication by SAINT-LAGER 1882, Cat. plantes vasc. Fl. Bassin Rhône (6): 539 where he even made the combination *Alexitoxicum officinale* (MOENCH 1794, Meth. plantas horti bot., agri Marburg., staminum situ descr.: 717, sub *Vincetoxico*) SAINT-LAGER, overlooked by most subsequent publications, as e.g. the "*Index Kewensis*"[3]). Thus it becomes evident that the name *Alexitoxicum* as an example illustrating the meaning of Article 62 has to be omitted[4]). Even though SAINT-LAGER intended to replace the generic name *Vincetoxicum* F. C. MEDIKUS by *Alexitoxicum* SAINT-LAGER simply for linguistic reasons, the latter has to be accepted as legitimate, the former being a later and therefore illegitimate homonym.

NOTES

[1]) The generic name "*Vincetoxicum*" apparently used for the first time by CAESALPINUS 1583, Plantis libri XVI: for *Gentiana asclepiadea* LINNAEUS 1753, Spec. Plant., ed. 1, **1**: 227, n. 4, by DODONAEUS 1616, Stirp. hist. pempt. sex: 407 in the sense of the nomenclatural type of our genus, *Asclepias Vincetoxicum* LINNAEUS 1753, Spec. Plant., ed. 1, **1**: 216, n. 12 is composed from the Latin verbe v i n c e r e = to vanquish, and the Latin foreign noun from the Augustan period and the silver latinity t o x i c u m, - i (n.) [derived from the Greek adjective *τοξικόσ, - ή, - όν* (toxikos) = pertaining to the arrow], originally used for arrow poison, later for poison in general. Both *Gentiana asclepiadea* and *Asclepias Vincetoxicum* were believed to be an effective antidote. The same idea is expressed in the generic name "*Antitoxicum*" of SAINT-LAGER, composed by the Greek prefix *ἀντί* (anti) = against and t o x i c u m, and also by the word *Alexipharmacum*, from the Greek verbe *ἀλέξειν* (alexein) = to keep off, and the Greek noun *τό φάρμακον* (to pharmakon) = poison.

[2]) For the date of publication of the generic name *Vincetoxicum* F. C. MEDIKUS see H. P. FUCHS 1961, in J. Soc. Bibliogr. nat. Hist. **4**: [in print].

[3]) In addition to the name *Alexitoxicum officinale* the following combinations appear in the sixth part of SAINT-LAGER's "*Catalogue des Plantes vasculaires de la Flore du Bassin du Rhône*", originally published in the "Annales de la Société botanique de Lyon" **9**: 495-688 [1882] on page 539:

Alexitoxicum albidum (JORDAN & FOURREAU 1866, Brev. plant. nov. **1**: 39, sub *Vincetoxico*) SAINT-LAGER
Alexitoxicum alpicolum (JORDAN & FOURREAU 1866: 39, sub *Vincetoxico*) SAINT-LAGER
Alexitoxicum beugesiacum (JORDAN & FOURREAU 1866: 39, sub *Vincetoxico*) SAINT-LAGER
Alexitoxicum dumeticolum (JORDAN & FOURREAU 1866: 38, sub *Vincetoxico*) SAINT-LAGER
Alexitoxicum luteolum (JORDAN & FOURREAU 1866: 39, sub *Vincetoxico*) SAINT-LAGER
Alexitoxicum ochroleucum (JORDAN & FOURREAU 1866: 38, sub *Vincetoxico*) SAINT-LAGER
Alexitoxicum petrophilum (JORDAN & FOURREAU 1866: 39, sub *Vincetoxico*) SAINT-LAGER
Alexitoxicum puberulum (TIMBAL-LAGRAVE 1873, in Bull. Soc. Sc. phys., nat., Toulouse **1**: 386, sub *Vincetoxico*) SAINT-LAGER
Alexitoxicum Shuttleworthianum [THURET & BORNET, ubi ?, sec.] SAINT-LAGER

ROUY 1908, Fl. France **10**: 232 cites the latter name as *Vincetoxicum Shuttleworthii* BORNET, in sched. hb. ROUY.

[4]) Instead of omissing this example it might also be possible to include it in the following way:

"On the other hand, *Alexitoxicum* SAINT-LAGER must not be rejected, although it was meant to replace *Vincetoxicum* F. C. MEDIKUS simply for linguistic reasons, because the latter was when published a later, and thus illegitimate homonym."

APPLICATION OF THE NAMES CARDAMINE DIGITATA, DENTARIA PENTAPHYLLA, AND D. HEPTAPHYLLA

Stanwyn G. Shetler (Ann Arbor, Mich.)

1. CARDAMINE DIGITATA Richards.

C. digitata Richards., Bot. Append., in Franklin's journ., p. 743, 1823.

C. hyperborea Schulz, Bot. Jahrb. *32*: 550, 1903.

C. richardsonii Hult. Fl. Al. & Yuk., p. 838, 1945.

In 1823, Richardson described *Cardamine digitata*, a new species from the American Arctic. When Schulz (1903) united *Dentaria* with *Cardamine* he made the new combination *C. digitata* (Lam.) Schulz (p. 372) for the entirely different European species long known as *Dentaria digitata* Lam. He rejected the name *C. digitata* Richards. as a later homonym and expressly substituted (p. 551) the new name *C. hyperborea* Schulz for Richardson's plant. In point of fact, *C. digitata* (Lam.) Schulz, not *C. digitata* Richards., constitutes the later homonym (cf. *Code*, art. 55), and the name *C. hyperborea* Schulz must be rejected as superfluous. As Porsild (1951, Fl. S. E. Yuk., p. 190) maintains, the correct name for the American plant is *C. digitata* Richards. Hultén (1945) followed Schulz in rejecting the latter name, but also rejected *C. hyperborea* Schulz on the grounds that it is a confused name, and proposed the new name *C. richardsonii*. This binomial is also superfluous. Furthermore, even though Schulz had confused *C. digitata* Richards. and *C. microphylla* Adams under his *C. hyperborea* (cf. Porsild, 1938, Fl. Little Diomede Is., pp. 31-32; 1943, Fl. N. W. Terr., p. 41; Hultén, l.c.), this taxonomic confusion has nothing to do with the application of the name *C. hyperborea*, which was specifically substituted for *C. digitata* Richards.

In view of the above, another name must be sought for the European species designated as *Cardamine digitata* (Lam.) Schulz. In Central Europe there are two well-marked species of *Dentaria*, treated by current authors under several different names each. One species, which has among other characters five-parted digitate leaves, passes under the names *D. pentaphylla* L. and *D. digitata* Lam., and the other species, with five- to seven-parted pinnate leaves, goes by either *D. pinnata* Lam. or *D. heptaphylla* Vill. Subsequently, these species will be referred to as the "digitate" and "pinnate" species, respectively. In the following synonymies and discussions I have attempted to clear up the nomenclatural confusion that surrounds both species.

2. DENTARIA PENTAPHYLLA L. emend. Scop.

Dentaria pentaphyllos L. Sp. Pl. 654, pro parte. 1753. (vars. β and γ).

Cardamine pentaphyllos (L.) Crantz, Class. Cruc. 127, pro parte. 1769. (vars. β and γ).

D. pentaphyllos Scop. Fl. Carn. ed. 2, *2*: 20. 1772.

D. digitata Lam. Encyc. Meth. Bot. *2*: 268. [16 Oct.] 1786.

C. pentaphylla (L.) R. Br. *in* Ait. Hort. Kew. ed. 2, *4*: 101. 1812.

C. digitata (Lam.) Schulz, Bot. Jahrb. *32*: 372. 1903; non Richardson.

In 1753, Linnaeus described three species of *Dentaria*, among which was *D. pentaphyllos* with three varieties designated. Under this species he combined the aforementioned pinnate and digitate species even though they were well-known taxa long before his writing. Perhaps he was overwhelmed by the many intermediates that occur (cf. Schulz, p. 371). From his synonyms it is clear that his var. α is the pinnate species and that the other two varieties belong to the digitate species. Linnaeus obviously knew that some botanists disagreed with his concept of *D. pentaphyllos*. Gerard (1761, Fl. Galloprov., p. 356) clearly distinguished between the pinnate and digitate species by species-numbers and phrase-names — he did not use binomials — but Linnaeus in one of his last works (1771, Mant. Pl. Alt., p. 427) referred both of Gerard's species to his own *D. pentaphyllos*.

Scopoli (1772) was the first to restrict the name *D. pentaphyllos* L. to one of the two elements and thereby typified the name. By his choice of synonyms and his short diagnosis, he left no doubt that he was using this name for Linnaeus' vars. β and γ only, i.e., for the digitate species. While the effect of Scopoli's restriction was to divide Linnaeus' species into the two long-recognized elements, he did not treat the pinnate element in his *Flora* and consequently gave us no name for this species.

The first explicit division of the inclusive *D. pentaphyllos* L. into both the pinnate and digitate species was made independently by Lamarck and by Villars (Hist. Pl. Dauph. *1*: 281) in the same year, 1786. Villars, who published first, took up the Linnaean epithet in the sense of Scopoli for the digitate species. Lamarck, on the other hand, rejected the original epithet entirely and proposed two new names. He called the digitate species, appropriately, *D. digitata.* However, since Scopoli and Villars had already taken up Linnaeus' binomial for this element, Lamarck's name is superfluous according to the present *Code* (art. 55). Aiton (1789, Hort. Kew. *2*: 386-387) reinstated *D. pentaphyllos* L. for the digitate species and cited *D. digitata* Lam. and *D. pentaphyllos* L. var. β as synonyms.

Crantz (1769), who first combined *Dentaria* Tourn. with *Cardamine* Tourn., transferred *D. pentaphyllos* L. s.l. to *Cardamine,* and his combination, *C. pentaphyllos* (L.) Crantz, constitutes the first validly published name for the digitate species when placed in *Cardamine,* even though he was not using Linnaeus' epithet in a restricted sense. This same combination was made again in 1812 by Robert Brown without reference to Crantz. Since Brown used the epithet *pentaphylla* L. in the restricted sense, one might regard him as having emended Crantz' combination (cf. Rothmaler, 1958, Exkursionsflora, p. 227). The combination later made by Schulz (1903), *C. digitata* (Lam.) Schulz, is clearly illegitimate. Not only was the epithet *digitata* Lam. a later homonym of *digitata* Richards., but it was not the earliest epithet available for the European digitate species.

In the Linnaean Herbarium (cf. Savage, p. 113), there is a specimen labeled "*pentaphyllos* 3" in Linnaeus' own handwriting. By using this epithet and the correct species-number, Linnaeus clearly linked this specimen to the 1753 edition of his *Species Plantarum.* However, the specimen was collected in North America by Kalm, as indicated by the "K" which he added to the above inscription. I have seen a microfiche reproduction of this specimen, which unquestionably represents the North American *D. laciniata* Willd., as long ago surmised by J. E. Smith (cf. his handwritten note on the specimen). Lacking any reference to Kalm or North America, Linnaeus' description of *D. pentaphyllos* in no way even suggests that he was including any North American plants in his concept of this species. The synonyms all have a straightforward application either to the pinnate or to the digitate European species. Quite likely this specimen of *D. laciniata* Willd. was added to Linnaeus' herbarium after *Species Plantarum* was written. At the time, he must have thought it conspecific with the two European species that he had combined under *D. pentaphyllos.* Since there is no ambiguity about the application of Linnaeus' description as restricted by Scopoli and since the specimen of *D. laciniata* is not mentioned in the protologue, this specimen can hardly be taken as the type of *D. pentaphyllos* L.

There is also a specimen of the pinnate species (i.e., *Dentaria heptaphylla* Vill., see below) in the Linnaean Herbarium, but it bears no inscription and likewise can hardly be considered the type of *D. pentaphyllos* L. In short, both specimens in the Linnaean Herbarium that pertain obviously to Linnaeus' *D. pentaphyllos* must be disregarded for purposes of typification.

3. DENTARIA HEPTAPHYLLA Vill.

Dentaria pentaphyllos L. Sp. Pl. 654, pro parte. 1753. (var. α).

Cardamine pentaphyllos (L.) Crantz Class. Cruc. 127, pro parte. 1769. (var. α).

D. heptaphyllos Vill. Hist. Pl. Dauph. *1*: 281. [Feb.] 1786; op. cit. 3, pt. 1: 364-365. 1789.

D. pinnata Lam. Encyc. Meth. Bot. *2*: 268. [16 Oct.] 1786.

C. pinnata (Lam.) R. Br. *in* Ait. Hort. Kew. ed. 2, *4*: 101. 1812.

Lamarck is generally credited with first dividing *D. pentaphyllos* L. s.l. into two species; consequently, most authors have taken up his name, *D. pinnata,* for the pinnate species, whether or not they have accepted *D. digitata* Lam. for the digitate species. As Schulz (p. 371) points out, however, Villars distinguished these two species three years earlier (1786, *1*: 281) than he is usually credited with having done (1789, *3*: 364-365). This means that he published in the same year as Lamarck, 1786. Schulz, after raising this problem of priority, made no effort to resolve it, but tacitly admitted that he was taking up the epithets of Lamarck because they had been in long usage.

Villars' work is basically a flora of the Province of Dauphiné, but the systematic catalog only begins with the second volume. In this catalog each species is described at some length and synonyms are cited. The pinnate and digitate species of *Dentaria* are

recognized under the names *D. heptaphyllos* and *D. pentaphyllos*, respectively (3; pt. 1: 364-365, 1789). Both are clearly linked to *D. pentaphyllos* L. s.l. by his citations, and he without doubt used the name *D. pentaphyllos* sensu Scopoli, because Scopoli is cited. Since the date of volume 3 is 1789, these names are regularly cited in synonymy under Lamarck's. However, under both species Villars clearly cites his own first volume published three years earlier (1786, p. 281). Turning here, one finds both "*D. pentaphyllos* L." and "*D. heptaphyllos* L." (the latter binomial wrongly attributed to Linnaeus) described in a list of plants entitled, "Plantes de la Grande Chartreuse." The descriptions are short, but as Schulz (pp. 371-372) points out they are quite adequate and unambiguous. Although no synonym or literature citations are given, Villars' own cross-reference in vol. 3 leaves no doubt about the application of these names to the two species in question.

Why these descriptions have generally been overlooked is difficult to say. Perhaps the introductory nature of the first volume and the informal way in which the descriptions were given are the explanation. Villars seemed to regard this first volume as a sort of necessary introduction to the formal catalog. In the long "Preface," which is followed by sections on the classes, families, and genera of plants indigenous to Dauphiné, his methods and general philosophy are discussed. The latter half of the volume consists of a series of informal lists of plant collections ("Herborisations") from various local regions of the Province. Although binomials are used throughout, many of the species lack descriptions and all are without synonym and literature citations. Obviously, these citations were omitted because of the forthcoming catalog in the next two volumes. It appears that descriptions were given for those species for which there was likely to be confusion on the basis of previous literature.

The month and even the day of issue of the pertinent section of Lamarck's work (Encyc. Meth. Bot. 2: 268) have been amply established as 16 October (cf. Rothmaler, 1939; Van Steenis-Kruseman, 1960). The month of publication for the pertinent volume of Villars' work (vol. 1) apparently is February (cf. Rickett and Stafleu, 1961, p. 147). This means that Villars' names were published about eight months earlier than Lamarck's and therefore clearly take priority over the names of the latter author.

For those who wish to unite *Dentaria* with *Cardamine*, a legitimate combination for the pinnate species does not exist. Robert Brown's combination *C. pinnata* (Lam.) R. Br., which Schulz accepted, is not legitimate, because it is not based on the earliest epithet. Although Rothmaler (1958, Exkurs., p. 227) took up the combination *C. heptaphylla* (Vill.) Schulz, this combination was not validly published by Schulz. After stating that this would be the name *if* Villars were followed, Schulz (p. 372) expressly rejected Villars' epithets for the two species in question in favor of the better known epithets of Lamarck. To be published validly a name must be accepted by the author (*Code*, art. 33). Nor can Rothmaler be regarded as having validly published this combination because the basionym with full citation was not given as required by the *Code* (art. 32) after 1 January 1953.

Therefore, the correct combination is here proposed as CARDAMINE HEPTAPHYLLA (VILL.) SHETLER COMB. NOV., based on *Dentaria heptaphyllos* Vill. (Hist. Pl. Dauph. 1: 281, 1786).

LITERATURE CITED

Aiton, William. 1789. Hortus Kewensis, vol. 2. London. 460 p.

——. 1812. Hortus Kewensis, ed. 2, rev. by W. T. Aiton [son], vol. 4. 522 p.

Crantz, H. J. 1769. Classis Cruciformium, etc. Leipzig. 139 p.

Gerard, Louis. 1761. Flora Galloprovincialis. Paris. 585 p.

Hultén, Eric. 1945. Flora of Alaska and Yukon, pt. 5. Lunds Universitets Arsskrift. N. F. Avd. 2, Bd. 41, Nr. 1: 799-978.

International Code of Botanical Nomenclature, adopted by the Eighth International Botanical Congress, Paris, July 1954. 1956. Editorial Committee, J. Lanjouw (chm.), and F. A. Stafleu (sec.). Utrecht. Reg. Veg., vol. 8. 338 p.

Lamarck, J. B. 1786 [16 Oct.]. Encyclopédie methodique-botanique, vol. 2. Paris. 774 p.

Linnaeus, C. 1753. Species plantarum, vol. 2. Stockholm. pp. 561-1200.

——. 1771. Mantissa plantarum altera. Stockholm. 584 p.

Porsild, A. E. 1938. Flora of Little Diomede Island in Bering Strait. Transactions of the Royal Society of Canada, ser. 3, 32(5): 21-38.

——. 1943. Materials for a flora of the continental Northwest Territories of Canada. Sargentia *4*: 1-79.

——. 1951. Botany of southeastern Yukon adjacent to the Canol Road. National Museum of Canada Bulletin 121: 1-400.

Richardson, J. 1823. Botanical appendix (Append. VII), *in* Narrative of a journey to the shores of the polar sea, in the years 1819, 20, 21, and 22, by John Franklin. London. pp. 729-768.

Rickett, H. W., and Stafleu, F. A. 1961. Nomina generica conservanda et rejicienda Spermatophytorum IX bibliography. Taxon *10*(5): 132-149.

Rothmaler, Werner. 1939. Die Erscheinungsdaten von Lamarck's Encyclopedie. Chronica Botanica *5*: 438-440.

——. 1958. Exkursionsflora von Deutschland-Gefässpflanzen. Berlin. 502 p.

Savage, Spencer. 1945. A catalogue of the Linnaean Herbarium. London, Taylor and Francis. 225 p.

Schulz, Otto E. 1903. Monographie der Gattung Cardamine. Engler, Bot. Jahrb. *32*: 280-623.

Scopoli, Giovanni A. 1772. Flora Carniolica, ed. 2, vol. 2. Vienna. 496 p.

Van Steenis-Kruseman, Mrs. M. J. Aug. 1960. Dates of publication and bibliographical notes. Flora Malesiana Bulletin 15: 730-743.

Villars, M. 1786 [Feb.]. Histoire des Plantes de Dauphiné, vol. 1. Paris. 467 p. Vol. 3, 1789, 1091 p.

Willdenow, C. L. 1800. Species plantarum, ed. 4, vol. 3. Berlin. 2409 p.

ACKNOWLEDGEMENTS

The writer gratefully acknowledges the many useful bibliographic tips and expert nomenclatural opinions willingly offered to him during the preparation of this paper by Drs. Rogers McVaugh and Edward Voss, Herbarium, University of Michigan.

NEWS AND NOTES

INTERNATIONAL SOCIETY FOR TROPICAL ECOLOGY

The International Society for Tropical Ecology was founded in 1960 for the promotion of the study of tropical ecology in all its aspects. The Society is managed by an Executive Committee. (President: Dr. J. C. Sen Gupta; Vice-Presidents: Dr. F. R. Fosberg & Dr. C. G. G. J. van Steenis; General Secretary: Dr. G. S. Puri; Zoology Secretary: Dr. M. P. Motwani; Honorary Treasurer: S. K. Jain and 12 members). Two symposia were organised under the auspices of the Society, one at Bombay and another at Allahabad. The Society is publishing a bulletin containing original research papers. It has about 200 members from different countries of the world. National Committees have been established already in some countries.

The Society has also published a proforma for the study of a Forest Ecosystem. This proforma, bulletins, membership forms and particulars are available from the General Secretary, I.S.T.E., 10, Chatham Lines, Allahabad.

Admission fee (Rs. 5.00; $ 2.00; sh 15/—); Annual dues: personal membership (Rs. 15/—; $ 5.00; £ 1/15/—) Institutions (Rs. 20/—; $ 7.00; £ 2/10/—) Life membership (Rs. 200/—; $ 70.00; £ 25/—).

COMMITTEE FOR SPERMATOPHYTA

The Committee for Spermatophyta decided on 24 October 1961 to co-opt as members Dr. N. Hylander from Uppsala, Sweden and Dr. R. C. Bakhuizen van den Brink from Leiden, Netherlands.

A FURTHER EXAMPLE PROPOSED FOR INCLUSION IN ARTICLE 23

Article 23 of the International Code of Botanical Nomenclature (1956) provides for the transcription of symbols forming part of certain specific epithets proposed by Linnaeus, but makes no provision for transcribing symbols in specific epithets proposed by other authors. Some might argue that all such specific epithets are not to be allowed, but in some cases at least, rejection would appear to be unnecessary when a simple transcription, analogous to those already normal practice in the case of Linnean specific epithets involving symbols, would make them acceptable.

A species of *Rubiaceae* with a name exemplifying such a post-Linnean specific epithet was published by Büttner in Verhandlungen des Botanischen Vereins der Provinz Brandenburg **31**: 75 (1889) as *Leptactina Leopoldi* II [generic name ibid. cit. "Leptactinia"]. It is thought to be clearly the

intention of the code that the ordinal numeral portion of such a specific epithet should be transcribed into Latin, and a hyphen inserted between the two resulting words, complying with the method of treatment prescribed for specific epithets of two or more words in the same article viz. *Leptactina Leopoldi-secundi.* (It is irrelevant to the purpose of this note to comment upon the latinization of Leopold, and the originally-published form of this part of the specific epithet is followed).

It is proposed that the name of this species should be included (both in its original and transcribed forms) with the examples already given in Article 23, and that slight adjustment to the text of the article be made to permit this treatment of non-Linnean specific epithets.

I have consulted my colleagues Messrs. H. K. Airy-Shaw, J. P. M. Brenan and A. A. Bullock (Royal Botanic Gardens, Kew); J. E. Dandy (British Museum); Dr. M. A. Donk (Leiden): all of whom have considered the matter, and uphold this view.

J. R. Tennant
(Royal Botanic Gardens, Kew)

CONCERNING A LEGAL DEMAND (Art. 32)

Dr. Heywood (1961) has just effected anew the combination *Leptogramma Pozoi*, based on *Hemionitis Pozoi* Lag. At the close of his account, he recalls that we had accomplished the same last year "but in an invalid form since he does not cite the basionym".

This statement does not seem very exact.

In accordance with our norms of conciseness, we placed (1960) at the beginning of the study alluded to: "**Leptogramma Pozoi** (Lag., *Genera et species* . . .: 33. 1816) Laínz, comb. nova". Since on that page of Lagasca there is, of course, no other *Pozoi* epithet, the basionym is "clearly indicated" (as demanded by Art. 32 of the Paris Code). And the reference is as "full and direct" as the proposals (Deighton 1958) accepted (under unpublished amendment) by the Montreal Congress demand.

If Dr. Heywood interprets the adverb "clearly" in the sense of formally (demanding the printing in full of the basionymic combination), it is evident that he is reading into the law what it does not say.

Our long series of publications (of some primary content) seems, further, fully documented and carefully written.

References

Heywood, V. H. 1961. [In Heywood, V. H., Flora Europaea, Notulae Systematicae ad Floram Europaeam — Short Notulae] Fedde Repert. 64(1): 19-20.

Laínz, M. 1960. Aportaciones al conocimiento de la flora cántabro-astur, IV. Bol. I.D.E.A., ser. C. 1: 7.

Deighton, F. C. 1958. [In Nomenclature Proposals] Taxon 7: 264, prop. 187-188.

Manuel Laínz (Gijon)

BERBERIS AND MAHONIA

Botanists interested in *Berberis* and *Mahonia* will be glad to know that a new taxonomic revision of these genera has been published by The Linnean Society of London.

The author Dr. L. W. A. Ahrendt has surveyed both genera from a world wide standpoint, and his revision which runs to 410 pages is illustrated with 67 line drawings, and includes 51 maps showing the distribution of the groups, sections and subsections into which the genera are divided.

Copies available from General Secretary, Linnean Society of London, Burlington House, Piccadilly, London, W. 1. Price £ 4 ($ 12.00).

TRANSFER OF LOCATION FOR TYPE SPECIMENS

Recommendation 8B under Article 8 of the Code (1956) suggests that the original material of a taxon be deposited in a permanent responsible institution. It is the conviction of the author that this institution also should be a center of botanical study where considerable botanical investigations are taking place. With this in mind, I have transferred the location of four type specimens, originally deposited in the herbarium of Southern Illinois University (SIU), to the herbarium of the Missouri Botanical Garden (MO).

Data for these specimens are:

Leguminosae

Sweetia handroi Mohl. Holotype. Collector: *O. Handro 445.* Brazil: São Paulo, Mojí-Guacú, Reserva Florestal (Fazenda Campinha). February 3, 1955. Isotype in SP.

Zornia echinata Mohl. Paratype. Collector: *B. Rambo 45113.* Brazil: Rio Grande do Sul, Fazenda do Arroio p. Osorio. January 4, 1950.

Zornia pardina Mohl. var. *pardina.* Holotype. Collector: *B. Rambo 56482.* Brazil: Rio Grande do Sul, Torres. January 19, 1955.

Acanthaceae

Stenandrium pelorium Leonard. Holotype. Collector: *A. J. Hendricks 751.* Mexico: Shroeder Site, 5 miles South of Durango Ciudad. July 22, 1951.

Robert H. Mohlenbrock (Carbondale)

HERBARIUM BRADEANUM

HERBARIUM BRADEANUM — Rio de Janeiro: New address: Avenida Rio Branco n° 257, rooms group 308. — The steady growth of our herbarium made it necessary to move to larger quarters. We were fortunate to find these in the same building, in down town Rio. Botanists visiting Rio de Janeiro are invited to use our modest installations as "operation headquarters". Typewriter and telephone are available, also a stove to dry plants and a card index of Brazilian common names. Our Post-box (Caixa Postal LAPA-5) may be used to assure quick receipt of correspondence.

The first botanist to visit us at our new address was Professor Dr. Mattick from BERLIN-Dahlem, who found us still in the mess of moving.

Welcome everybody coming to Rio.

NEW I.D.C. MICROFICHES

Aiton, W. — Hortus Kewensis. Ed. 1. 3 vols. London 1789. (Incl. J. Britten: The history of —, 1912) ($ 15.00).

——, W. & ——, W. T. — Hortus Kewensis. Ed. 2. 5 vols. London 1810-1813. (Incl. J. Britten, The history of —, 1912) ($ 19.00).

Aubert du Petit-Thouars, A. — Histoire des végétaux recueillis dans les iles Australes d'Afrique. 72 p., 24 tab. Paris 1806 ($ 3.00).

Boissier, E. — Centuria Euphorbiarum. 40 p. Lipsiae, April 1860. ($ 0.50).

Brühl, P. — A Census of Indian Mosses. Records of the Botanical Survey of India. Vol. 13 (1-2), 1931. Calcutta. ($ 3.00).

Bunge, A. — Reliquiae botanicae, sive enumeratio plantarum in ... Asiae mediae, ab A. Lehmann 1839-1842. 1 vol 8°, 15 icones folio. (Arb. d. naturf. ver. Riga. V. 1, 1847). ($ 2.00).

Candolle, A. de — La Phytographie. xxiv, 484 p. Paris 1880. ($ 4.50).

Cavanilles, A. J. — Icones et descriptiones plantarum quae aut sponte in Hispania crescunt, aut sponte in Hispania crescunt, ... Hortis Hospitantur. 6 vols. Madrid 1791-1801. ($ 19.00).

Cyrillus, D. — Tabulae botanicae elementares quator priores sive icones partium ... Neapoli, 1790. ($ 2.50).

Decaisne, J. — Florule Sinaica. Enumération des plantes recueillies par M. Bove, dans les deux Arabies, la Palestine, la Syrie et l'Egypte. (Ann. d. Sci. Nat. V. 2-3, 1834-35). ($ 1.00).

Dixon, H. N. — The Mosses of Kaw-To. (Bankok, Siam. soc. nat. hist. Journal). pp. 19-21. Suppl. vol. 8(1), 1929. ($ 0.50).

Dozy, F. & Molkenboer, J. H. — Muscorum frondosorum novae species ex archipelago Indico et Japonia. 22 p. Leiden 1844. ($ 0.50).

Dozy, F. & Molkenboer, J. H. — Musci frondosi inediti Archipelagi Indici in Java, Borneo, Sumatra, Celebes, Amboina, Japonia. 185 p. 60 fig. 1845-1854. ($ 4.50).

Duhamel du Monceau, H. L. — Traité des arbres et arbustes qui se cultivent en France en pleine terre. Paris 1755. 2 vols. Ed. 1. ($ 12.00).

Eichwald, Ed. — Plantarum novarum minus cognitarum quas in itinere Caspio-Caucasio. 2 fasc. Folio. Lipsiae 1831-1833. ($ 2.00).

Gibelli, G. & Belli, S. — Rivista critica delle specie di Trifolium Italiane comparate con quelle del resto d'Europa e delli regiono circummedit. (Mem. Ac. Sci. Torino. 1890-92). ($ 2.50).

Griffith, W. — Muscologia Intineris Assamici. (Calcutta Journal of nat. hist. vol. 2, 3. 1842-43). ($ 1.00).

Griffith, W. — On the Higher Cryptogamous plants. (Posthumus Papers, Notulae ad Plantas Asiaticas. vol. 2, 1849). ($ 3.50).

Hooker, W. J. — Musci Exotici, containing figures and descriptions of new or little known Foreign Mosses. 2 vols. 176 pl. London 1818-1820. ($ 5.00).

Hooker, W. J. — Musci Nepalenses. Description of several new Mosses from Nepal. (Transactions Lin. Soc. V. 9-1808. pp. 307-322). ($ 0.50).

Jacquin, N. J. — Hortus Botanicus Vindobonensis seu plantarum rariorum. 3 vols. folio. Vindobonae, 1770-1777. ($ 19.50).

Linnaeus, C. — Species Plantarum ... Ed. Quarta ... curante C. L. Willdenow. V. 1-5(1). Paris, 1797-1810. F. Schwaegrichem (Muscos), V. 5(2), H. F. Link, (Fungi), V. 6(1-2), Paris, 1825-30. ($ 59.00).

Linnaeus, C. — Systema Vegetabilium. Editio nova. 7 vols. Mantissa I-III. Ed. J. J. Roemer & J. A. Schultes. Stuttgardt, 1817-1830. ($ 68.00).

PAPPE, C. W. L. — Silva Capensis, or a description of South African forest trees and arborescent shrumbs. 53 p. Ed. 1. Leipzig 1854. ($ 0.50).

PERSOON, C. H. — Synopsis Plantarum. 2 vols. Paris 1805-1807. ($ 9.50).

PRESL, K. B. — Cyperaceae et Gramineae Siculae. xxii, 58 p. Prague 1820. ($ 1.00).

SCHENK, A. — Plantarum species per Aegyptum, Arabiam et Syriam. vi, index, 46 p. Monachi 1840. ($ 0.50).

STEUDEL, E. T. — Nomenclator Botanicus, sew synonymia plantarum universalis. Ed. 2. 2 vols. 1840-1841. ($ 19.00).

TOKYO — The Botanical Society. The Botanical Magazine. Vol. 28-32, 39, 1914-1918, 1925. ($ 46.00).

TRINIUS, C. B. — De Graminibus paniceis. 287 p. Petropoli 1826. ($ 3.00).

ZUCCARINI, J. G. — Plantarum novarum vel minus cognitarum quae in horto botanico herbarioque regi Monacensi. 5 fasc. Monachi 1837-1840. ($ 8.50).

INTERNATIONAL ASSOCIATION FOR PLANT TAXONOMY

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Argentina

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▪

Archangelsky, Dr S., Secc. Paleontologia, Instituto Miguel Lillo, Calle M. Lillo 205, Tucumán (PB) (1961).
Boelcke, Ing. O., Av. Roque S. Pena 760, III, Buenos Aires (1952).
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Burkart, Ing. A., Instituto de Botánica Darwinion, San Isidro (1952).
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Hunziker, Ing. A. T., Casilla de Correo 23, Córdoba (1951).
Krapovickas, A., Instituto Miguel Lillo, Calle M. Lillo 205, Tucumán (1951).
Menendez, Dr C. A., Museo Argentino de Ciencias Naturales, Av. Angel Gallardo 470, Buenos Aires (PB) (1955).
Meyer, Dr T., Bolivar no. 1140, Tucumán (1961).
Parodi, Ing. L. R., Lavalle 4680, Buenos Aires (1954).
Wright, J. E., Santa Rosa 391, Martínez, FCNGBM (1952).

Australia

State Herbarium of South Australia, Botanic Garden, North Terrace, Adelaide (1961).
Animal Industry Branch, P.O. Box 87, *Alice Springs*, N.T. (1954).
Botanic Museum and Herbarium, Botanic Gardens, *Brisbane*, Queensland (1955).
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National Herbarium of New South Wales, Botanic Gardens, *Sydney*, N.S.W. (1951).
The Fisher Library, The University of Sydney, *Sydney*, N.S.W. (1956).

▪

Ali, Dr S. I., Botany Department, University of Melbourne, Parkville N. 2, Melbourne, Victoria (1957).
Blake, S. T., Botanic Museum and Herbarium, Botanic Gardens, Brisbane, Queensland (1952).
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Cookson, Dr I., Dept. of Botany, University, Melbourne (PB) (1955).
Curtis, Dr W. M., Dept. of Botany, University of Tasmania, Hobart, Tasmania (1951).
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Green, Dr J. W., Dept. of Botany, The University of New England, Armidale, N.S.W. (1957).

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Pescott, R. T. M., Melbourne Botanic Gardens & Herbarium, South Yarra, Victoria (1957).

Rigby, J. F., Central Research Laboratories, Shortland 2N, N.S.W. (PB) (1961).

Schodde, R., Division of Land Research and Regional Survey C.S.I.R.O., Box 109 City, Canberra, A.C.T. (1958).

Schuurman, J. A., General P.O., Box No. 857-L, Brisbane, Queensland (1952).

Tindale, Miss M. D., National Herbarium, Botanic Gardens, Sydney, N.S.W. (1951).

Vickery, Dr J. W., National Herbarium of New South Wales, Botanic Gardens, Sydney (1959).

Wilson, P., The Herbarium, Adelaide Botanical Gardens, North Terrace, Adelaide (1956).

Austria

Botanisches Institut (Institut für systematische Botanik) der Universität, Holteigasse 6, *Graz* (1951).

Botanisches Institut und Botanischer Garten der Universität Wien, Rennweg 14, Wien (1960).

*

Buxbaum, Prof. F., Sackgasse 13/1/4, Judenburg (1958).

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Rechinger, Dr K. H., Naturhistorisches Museum, Botanische Abteilung, Burgring 7, Wien (1951).

Regel, Prof. Dr C., Stiftingtalstrasse 69, Graz (1959).

Widder, Dr F., Holteigasse 6, Graz (1951).

Belgium

Jardin Botanique de l'Etat, 236 Rue Royale, *Bruxelles* (1951).

Institut National pour l'Etude agronomique du Congo (INEAC), Rue Defacqz, *Bruxelles* (1951).

Universiteitsbibliotheek, Mgr. Ladeuze Plein, *Leuven* (*Louvain*) (1960).

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*

Delcourt, A., Collège Saint-Julien, Ath (PB) (1955).

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Deuse, P., 103 Rue Albert Mockel, Liège (1952).

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Marcelle, Mme. H., Université Libre de Bruxelles, 50 Avenue F. D. Roosevelt, Bruxelles (PB) (1958).

Petit, M., Rijksplantentuin, Koninklijke Straat 236, Bruxelles (1954).

Ramaut, Dr J. L., Feronstree 141, Liège (1951).

Robyns, Prof. W., Rijksplantentuin, Koninklijke Straat 236, Bruxelles (1951).

Steyaert, R. L., 159 Rue des Atrébates, Bruxelles (1951).

Tournay, R., 157 Avenue Crokaert, Woluwé-St. Pierre, Bruxelles (1952).

Van der Veken, M., Rijksplantentuin, Koninklijke Straat 236, Bruxelles (1954).

Vauthier, Et., Bibliothèque Centrale, Université Libre de Bruxelles, 50 Avenue F. D. Roosevelt, Bruxelles (PB) (1957).

Wilczek, Dr R., 55 Rue de la Réforme, Bruxelles 6 (1951).

Bolivia

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Brazil

Instituto Agronômico de Campinas, Caixa Postal 28, *Campinas*, Est. do São Paulo (1954).

Instituto Paranaense de Botânica, Caixa Postal 1362, *Curitiba*, Paraná (1954).

Herbarium Bradeanum, Av. Rio Branco 257, sala 709, Caixa Postal Lapa 5, *Rio de Janeiro* (1961).

Instituto de Botânica de São Paulo, Caixa Postal 4.005, *São Paulo* (1955).

*

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Barbosa, Prof. O., Caixa Postal 294, Petropolis, Rio de Janeiro (PB) (1955).

Bezerra Cavalcante, Dr P., Museu Paraense "Emilio Goeldi", Caixa Postal 399, Belém, Para (1957).

Castellanos, Prof. A., Rua Barata Ribeiro, 185-apto. 306, Copacabana, Rio de Janeiro (1951).

Chaves Batista, Prof. A., Institute of Mycology, Universidade do Recife, Av. Rosa e Silva, 347, Recife, Pernambuco (1951).

Duarte, Dr A. P., Jardim Botânico do Rio de Janeiro, Rua Jardim Botânico 1008, Rio de Janeiro (1955).

Fidalgo, Dr O., Secretaria da Agricultura, Instituto de Botanica, Caixa Postal 4005, São Paulo (1955).

Froés, R. L., Instituto Agronômico do Norte, Belém do Para (1952).

Goncalves Lima, Prof. Dr O., Escola de Quimica, Universidade do Recife, Rua Don Bosco, Recife, Pernambuco (1956).

Hatschbach, G., Caixa Postal 1142, Curitiba, Paraná (1955).

Heringer, Dr E. P., Departamento de Agricultura D.G.A. — NOVACAP, Brasília, D.F. (1954).

Joly, Dr A. B., Dept. of Botany, Fac. Fil. Cienc. Let. Univ. S. Paulo, Caixa Postal 8105, São Paulo (1951).

Kauffmann Fidalgo, Dr M. E. P., Secretaria da Agricultura, Instituto de Botânica, Caixa Postal 4005, São Paulo (1955).

Luis, Dr I. T., Instituto Geobiológico, Canoas, Rio Grande Do Sul (1954).

Mello F°, Prof. Dr L. E., Division of Botany, Museum National (R), Quinta da Boa Vista, Sao Cristova, Rio de Janeiro (1959).

Mendes Magelhaēs, Dr G., Instituto Agronômico de Belo Horizonte, Minas Gerais (1955).

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Pires, J. M., C. Postal 48, Belém, Pará (1954).

Reitz, P. R., Herbario "Barbosa Rodrigues", Itajai, Santa Catarina (1952).

Rohr, S. J., P. J. A., Colégio Catarinense, Florianópolis (1954).

Tavares, Dr S., Caixa Postal 1531, Recife, Pernambuco (1956).

Uchôa, Dr J. M. S., Faculdade de Farmácia e Odontologia do Ceára, Rua Rio Branco 1321, Fortaleza, Ceára (1959).

Vattimo, Dra I. de, Jardim Botânico do Rio de Janeiro, Rua Jardim Botânico 1008, Gavea, Rio de Janeiro (1955).

British North Borneo

Office of the Conservator of Forests, Forest Department, Sandakan (1954).

Meijer, Dr W., Forestry Department, Sandakan (1951).

British West Indies

Imperial College of Tropical Agriculture, Trinidad (1957).

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The Silviculturist, 526 Merchant Street, *Rangoon* (1951).

Ma Khin Sein, Miss, Botany Dept., Rangoon University, Rangoon-Burma (1961).

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National Museum of Canada, Ottawa, Ont. (1951).

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University of Toronto Library, Toronto 5, Ont. (1961).

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Boivin, Dr B., Division of Botany, Science Service, Dept. of Agriculture, Ottawa, Ont. (1951).

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Grant, Dr W. F., Department of Genetics, Macdonald College of McGill University, Macdonald College P.O., Que. (1960).

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Honeyman, Prof. J. M., Dept. of Biology, Sir George Williams University, Montréal 25, Qué. (1961).

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Illman, Prof. W. I., Department of Biology, Carleton University, Ottawa, Ont. (1959).

Jansonius, J., Imperial Oil Ltd., 300 Ninth Avenue West, Calgary, Alberta (PB) (1961).

Jenkins, Prof. B. C., Division of Plant Science, University of Manitoba, Winnipeg, Man. (1960).

Kawano, S., Institut Botanique, Université de Montréal, 4101 est, rue Sherbrooke, Montréal 36, Qué. (1960).

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Kucyniak, J., Montreal Botanical Garden, 4101 Est, Rue Sherbrooke, Montréal 36, Qué. (1951).

Lawrance, A. E., Natal, P.O., B.C. (1961).

Leblanc, Frère Fabius, Biology Dept., University of Ottawa, Ottawa 2, Ont. (1955).

Ledingham, Dr G. F., Regina College, University of Saskatchewan, Regina, Sask. (1952).

Lemke, P. A., Jr., University of Toronto, Toronto 5, Ont. (1961).

Lepage, Rev. Père Ernest, Ecole d'Agricole, Rimouski, Qué. (1951).

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Macrae, Dr Ruth, Plant Research Institute, Central Experimental Farm, Ottawa, Ont. (1952).

McGregor, D. C., Geological Survey of Canada, 601 Booth Street, Ottawa, Ont. (1961).

McLain, Dr D. D., Plant Research Institute, Research Branch, Central Experimental Farm, Ottawa, Ont. (1961).

Montgomery, Prof. F. H., Dept. of Botany, Ontario Agricultural College, Guelph, Ont. (1952).

Moss, Prof. E. H., Dept. of Botany, University of Alberta, Edmonton, Alta. (1951).

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Porsild, Dr A. E., National Museum of Canada, Ottawa, Ont. (1951).

Radforth, Prof. N. W., Dept. of Botany, McMaster Univ., Hamilton, Ont. (PB) (1955).

Raymond, M., Montreal Botanical Garden, 4101 Sherbrooke St. East, Montreal, Que. (1951).

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Rouse, Dr G. E., Department of Biology and Botany, University of British Columbia, Vancouver 8, B.C. (1960).

Savile, Dr D. B. O., Mycological Herbarium, Plant Research Institute, Central Experimental Farm, Ottawa, Ont. (1951).

Scagel, Dr R. F., The University of British Columbia, Dept. of Biology and Botany, Vancouver 8, B.C. (1952).

Scoggan, Dr H. J., National Museum of Canada, Ottawa, Ont. (1951).

Seth, H. K., Dept. of Botany, University of Toronto, Toronto, Ont. (1961).

Soper, Prof. J. H., Dept. of Botany, University of Toronto, Toronto 5, Ont. (1951).

Staplin, Dr F. L., c/o Imperial Oil Ltd., 339-50th Avenue, S.E., Calgary, Alta. (1959).

Suguitan, Miss L. S., Dept. Biology, McMaster University, Hamilton, Ont. (1961).

Szczawinski, Dr A. F., Provincial Museum, Victoria, B.C. (1957).

Taylor, Dr A. R. A., Department of Biology, University of New Brunswick, Fredericton, N.B.

Taylor, Prof. T. M. C., Department of Biology and Botany, University of British Columbia, Vancouver, B.C. (1951).

Terasmae, Dr J., Geological Survey of Canada, Pleistocene section, Dept. of Mines and Technical Survey, Ottawa, Ont. (1952).

Weresub, Dr Luella K., Plant Research Institute, Central Experimental Farm, Ottawa, Ont. (1959).

Ziller, Dr W. G., Forest Biology Laboratory, 409 Federal Building, Victoria B.C. (1955).

Canary Islands

Sventenius, E., Jardin de Aclimatacion de Orotava, Puerto de la Cruz, Tenerife (1958).

Ceylon

Abeywickrama, B. A., Department of Botany, University of Ceylon, Colombo (1958).

Chile

Looser, G., Casilla 5542, Santiago 6 (1951).

Munoz Pizarro, Dr C., Museo Nacional de Historia Natural, Casilla 787, Santiago (1959).

Navas, Dr E., Escuela de Química y Farmacia, Universidad de Chile, Casilla 6084, Santiago (1959).

Pfister, Dr A., Instituto de Botánica y Farmacognosia, Casilla 237, Concepción (1951).

China

Fang, Wen-Pei, Dept. of Biology, National Szechuan University, Chengtu, Szechuan (1951).

Liu, Prof. Tung-Shiu, Department of Forestry, College of Agriculture, National Taiwan University, Taipeh, Taiwan, Formosa (1958).

Colombia

Dugand, Dr A., c/o Roncallo Hermanos, Ap. Postal 85, Barranquilla (1952).

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Congo

Université Lovanium, Leopoldville XI (1960).

*

Callens, H., Jardin Gillet, Kisantu (1952).

Troupin, Dr G., I.R.S.A.C., Lwiro-Bukavu (1951).

Costa Rica

Leon, J., Instituto de Ciencias Agricolas, Apartado Postal 74, Turrialba (1952).

Cuba

Sociedad Cubana de Botánica, Jardin Botánico de la Universidad, Carlos III esq. a Infanta, *La Habana* (1951).

*

Alain, Brother (*Enrique Liogier*), Herbario de la Salle, Calle 13 n. 608, Vedado, Habana (1951).

Alvarez, Dra M. T., Calle 14 n. 60, Reparto Miramar, Habana (1951).

Alvira y Devesa, Dra L. M., Calle 10 n. 29, entre A y lra., La Sierra, Marianao, Habana (1951).

Desoindre Coustaty, Dr C., Jardin Botánico de la Universidad, Carlos III esq. a Infanta, La Habana (1956).

Gale, J. A., Estación Experimental Agronómica, Santiago de las Vegas (1951).

Jordán, Dr R. R., Calle 10 n. 29, entre A y lra., La Sierra, Marianao, Habana (1951).

Czechoslovakia

Československá botanická společnost, Benátská 2, *Praha 2* (1958).

*

Dostál, Dr D. J., Botanicky Ustav, University Karlovy, Benátská 2, Praha II (1952).

Havlena, Dr V., Geological Dept. of the Charles University, Albertov 6, Praha II (PB) (1955).

Komarek, J., Botanical Institute of the Charles University, Benátská 2, Praha II (1959).

Němejek, F., Geological Pal. Dept., National Museum, Václavské námesti 68, Praha II (PB) (1960).

Obrhel, J., Geol.-geograf. fakulta, Karlovy University, Albertov 6, Praha II (PB) (1958).

Paclt, Dr J., Dúbravská cesta 9, Bratislava 9 (1952).

Žertová, A., Geobotanical Laboratory, Academy of Sciences, Pruhonice, near Praha (1958).

Denmark

Botanisk Centralbibliotek, Gothersgade 130, København K (1960).

*

Böcher, Prof. Dr T. W., Institute for Plant Anatomy and Cytology, Gothersgade 140, København K (1960).

Buchwald, N. F., Dept. of Plant Pathology, Royal Vet. and Agr. College, Rolighedsvej 23, København V (1952).

Christensen, T., Universitetets Botaniske Laboratorium, Gothersgade 140, København K (1954).

Christiansen, S., Universitetets Botaniske Museum, Gothersgade 130, København K (1952).

Hansen, A., Bot. Museum, Gothersgade 130, København K (1954).

Holmen, K. A., Bot. Museum, Gothersgade 130, København K (1960).

Ingwersen, P., Danmarks Geologiske Undersogelse, Charlottenlund (PB) (1955).

Koch, B. E., Universitetets min.-geol. Museum, Oestervoldgade 7, København K (1960).

Lange, J., Rolighedsvej 23, København V (1958).

Lange, Prof. M., Universitets Botaniske Laboratorium, Gothersgade 140, København K (1954).

Larsen, Dr K., Royal Danish School of Pharmacy, Botanical Laboratory, Universitetsparken 2, København Ø (1961).

Skovsted, Dr A., Botanical Museum of the University, Gothersgade 130, København K (1961).

Sørensen, Prof. Th., Universitets Botaniske Laboratorium, Gothersgade 140, København K (1955).

Dominican Republic

Canela-Lazaro, Dr M., Arzobispo Portes, 225 (Altos), Ciudad Trujillo (1960).

Jimenez, Dr J. de J., Max Gómez 38-40, Santiago de los Caballeros (1959).

Egypt

Abdalla, M., Agricultural Museum, Dokki, Cairo (1951).

Basta, F., Agricultural Museum, Dokki,, Cairo (1951).

Drar, M., Agricultural Museum, Dokki, Cairo (1951).

Iamam, M., Dept. of Botany, Faculty of Science, Cairo University, Giza, Cairo (1955).

Kassas, Dr M. A., Dept. of Botany, Faculty of Science, Cairo University, Giza, Cairo (1952).

Mahmoud, Dr M. Z., Dept. of Botany, Faculty of Science, Cairo University, Giza, Cairo (1952).

Saad, Dr S. I., Faculty of Science, The University, Moharram Bey, Alexandria (1951).

Shafey, M., M. Sc., Faculty of Science, Cairo University, Giza, Cairo (1951).
Täckholm, Mrs V., 60 Sharia Malek el Saleh, Roda, Cairo (1951).
Tadros, Prof. M., Faculty of Science, The University, Moharram Bey, Alexandria (1951).

Fiji

Botany Laboratory and Herbarium, Dept. of Agriculture, *Suva* (1958).

Finland

Botanisches Institut, Universität in Oulu, Kasarmintie 7, *Oulu* (1961).

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Alava, Dr R., Department of Botany, University of Turku, Turku (1960).
Buch, H. R. V., Kyrkbacken 3 E. 34, Månsas (1952).
Grönblad, Dr R., Centralgatan 86, Karis (1956).
Jalas, Dr J., Botanical Institute, University of Helsinki, Unionink. 44, Helsinki (1951).
Kukkonen, I., University of Turku, Dept. of Botany, Turku (1960).
Luther, Dr H., Botaniska Institutionen, Unionsgatan 44, Helsinki (1951).
Marklund, Dr G., Phanerogam Herbarium, Botanical Museum, Unioninkatu 44, Helsinki (1954).

France

Laboratoire de Phanérogamie, Muséum d'Histoire Naturelle, 57 Rue Cuvier, *Paris* V (1951).
Bibliothèque Centrale, Muséum d'Histoire Naturelle, 36 Rue Geoffroy Saint Hilaire, *Paris* V (1952).

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Bange, Ch., 22-24 Rue Grenette, Lyon (2e) (1952).
Boureau, Dr E., 64 Rue de Paris, Joinville-le-Pont, Seine (PB) (1955).
Campbell, Miss M. S., Casa Rossa, Menton-Garavan, Alpes Mar. (1953).
Chabrier, G., Lab. de Pal. Strat. Géologie, 1 rue Victor Cousin, Paris Vme (PB) (1960).
Deflandre, G., Lab. de Micropaléontologie E.P.H.E., 3 Place Valhubert, Paris V (PB) (1955).
Depape, Prof. G., Faculté libre des Sciences, 13 Rue de Toul, Lille (PB) (1955).
Deunff, J., Institut de Géologie, Rue du Thabor, Rennes, Ille et Vilaine (PB) (1955).
Doubinger, Dr J., 31 Rue de la Fonderie, Toulouse (1957).
Durand, Mlle S., Institut de Géologie, Rue du Thabor, Rennes, Ille et Vilaine (PB) (1958).
Emberger, Prof. L., Institut Botanique, 5 Rue Auguste Broussonet, Montpellier (1958).
Gaussen, Prof. H., Laboratoire de Botanique, Faculté des Sciences, Toulouse (1952).
Grambast, L. J., 15 Rue Daubenton, Paris V (PB) (1955).
Grangeon, P., Ecole St Julien, Brioude, Hte. Loire (PB) (1955).
Guillaumin, A., Muséum National d'Histoire Naturelle, Laboratoire de Culture, 57 Rue Cuvier, Paris V (1959).
Humbert, Prof. H., Muséum d'Histoire Naturelle, Laboratoire de Phanérogamie, 57 Rue Cuvier, Paris V (1951).
Jacques-Félix, H., 45bis Avenue de la Belle Gabrielle, Nogent sur Marne, Seine (1952).
Jovet-Ast, Mme S., Laboratoire de Cryptogamie, 12 Rue de Buffon, Paris 5e (1960).
Leroy, J. F., Laboratoire d'Agronomie tropicale, Muséum d'Histoire Naturelle, 57 Rue Cuvier, Paris V (1952).
Lourteig, Dr A., Muséum National d'Histoire Naturelle, Laboratoire de Phanérogamie, 57 Rue Cuvier, Paris V (1951).
Marnier-Lapostolle, J., 91 Bd Haussmann, Paris (1954).
Noachovitch, Prof. G., 9 Avenue G. Clémenceau, Nogent sur Marne, Seine (1955).
Normand, D., 45bis Avenue de la Belle Gabrielle, Nogent sur Marne, Seine (1952).
Peltier, M. A. G., 12 Rue Eugène Delacroix, Saint Maurice, Seine (1953).
Pons, A. H., Institut Botanique, 5 rue A. Broussonet, Montpellier (Hérault) (PB) (1960).
Portères, Prof. R., Laboratoire d'Agronomie tropicale, Muséum d'Histoire Naturelle, 57 Rue Cuvier, Paris V (1952).
Rabéchault, Dr H., 70 Rue Claude Jean Romain, Le Perreux-sur-Marne, Seine (1954).
Raymond-Hamet, Dr, 14 Rue de la Glacière, Paris XIII (1956).
Retz de Serviés, B. de, 20 Rue Magenta, Versailles (1951).
Rousseau, Prof. J., 60 Rue d'Issy, Vanves, Seine (1951).
Schnell, Dr R., Laboratoire de Botanique Tropicale, Avon, Seine et Marne (1954).
Sillans, R., 60 Avenue Simone, Brunoy, Seine et Oise (1952).
Tardieu-Blot, Mme M., Muséum d'Histoire Naturelle, Laboratoire de Phanérogamie, 57 Rue Cuvier, Paris V (1954).
Veillet-Bartoszewska, Mme M., 1 Rue du Cardinal Mercier, Paris IX (PB) (1955).

Vetter, P., Service géologique, Houillères d'Aquitaine, Decazeville-Aveyron (1957).
Vilmorin, R. de, Services Scientifiques Vilmorin-Andrieux, Verrières-le-Buisson, Seine et Oise (1955).
Vindt, J., Faculté des Sciences, 20 Cour Pasteur, Bordeaux (1955).
Vinot, M., Centre de Recherches Agronomiques, Villa Thuret, Cap d'Antibes, Alpes Mar. (1954).

French West Africa

Miege, J., Laboratoire de Botanique, Faculté des Sciences, Dakar (1957).

Germany

Botanischer Garten und Museum, Königin Luisestrasse 6-8, *Berlin-Dahlem* (1951).
Institut für systematische Botanik und Pflanzengeographie der freien Universität Berlin, Königin Luisestrasse 6-8, *Berlin-Dahlem* (1956).
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Institut für Agrobiologie der Universität Greifswald, Postfach 26, *Greifswald* (1956).
Geologisches Institut der Universität des Saarlandes, Saarbrücken (1960).

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Andrea, H., Schliessfach 233, Bonn a. Rh. (1961).
Bode, Dr H., Gartenplatz 5, Kamen, Westf. (PB) (1955).
Boerner, F., Botanischer Garten, Darmstadt (1955).
Buchheim, Dr G., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem (1956).
Buchloh, Dr G., Institut für Obstbau, Auf dem Hügel 6, Bonn a. Rh. (1952).
Cullmann, Dr W., Marktheidenfeld/Main (1958).
Domke, Dr W., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem (1951).
Eckardt, Prof. Dr Th., Königin Luisestrasse 6-8, Berlin-Dahlem (1957).
Encke, F., Palmengarten, Siesmayerstrasse, Frankfurt a. M. (1955).
Firbas, Prof. F., Untere Karspüle 2a, Göttingen (1954).
Gerloff, Dr J., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem (1957).
Grummann, Dr V. J., Liliencronstrasse 16, Berlin-Steglitz (1958).
Henssen, Dr A., Biegenstrasse 52, Marburg (1958).
Huber, Prof. Dr J. A., Bischof-von-Linggstrasse 8, Dillingen, Donau (1958).
Jacobsen, H., Botanischer Garten, Schwanenweg 13, Kiel (1958).
Jähnichen, H., Feuerbachstrasse-Block 21, Grossräschen/Niederlausitz, Kreis Senftenberg (PB) (1960).
Kirchheimer, Prof., Elsässerstrasse 2, Freiburg i. Br. (PB) (1957).
Klement, Dr O., Bauweg 5, Hannover-Linden (1958).
Kräusel, Prof. R., Naturk. Museum Senckenberg, Senckenberg Anlage 23, Frankfurt a. M. (PB) (1955).
Krüssmann, G., Dortmund-Brünninghausen (1959).
Leistikow, K. U., Werre Strasse 1, Herford-in-Westfalen (1959).
Ludwig, Dr W., Botanisches Institut, Pilgrimstein 4, Marburg a. d. L. (1952).
Maatsch, Prof. R., Burgweg 11, Hannover-Herrenhausen (1955).
Mädler, Dr K., Amt für Bodenforschung, Wiesenstrasse 72, Hannover S. 6 (PB) (1955).
Mägdefrau, Prof. K., Botanisches Institut,
Mägdefrau, Prof. Dr K., Institut für spezielle Botanik, Wilhelmstrasse 5, Tübingen (1955).
Melchior, Prof. Dr H., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem (1951).
Merxmüller, Dr H., Botanische Staatssammlung, Menzingerstrasse 67, München 38 (1952).
Meyer, K., Institut für Spezielle Botanik und Herbarium Haussknecht, Jena (15b) (1953).
Oberdorfer, Dr E., Landessammlungen für Naturkunde, Erbprinzenstrasse 13, Karlsruhe 17A (1952).
Pfeiffer, Dr H. H., Labor. f. Polar.-Mikrosk., Wilhelmstrasse 7, Bremen I (1951).
Poelt, Dr J., Botanisches Institut, Menzingerstrasse 67, München 38 (1952).
Potztal, Dr E., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem (1956).
Rauh, Prof. W., Botanisches Institut der Universität, Hofmeisterweg 4, Heidelberg (1960).
Remy, Dr W., Stierstrasse 6II, Berlin-Friedenau (PB) (1958).
Roselt, Dr G., Drevesstrasse 13, Jena (PB) (1958).
Rothmaler, Dr W., Institut für Agrobiologie der Universität Greifswald, Postfach 26, Greifswald (1951).

Schmidt, Dr E., Institut für Holzforschung und Holztechnik, Winzererstrasse 45, München 13 (1956).

Schultze-Motel, J., Institut für Kulturpflanzenforschung, Gatersleben, Kr. Aschersleben (PB) (1960).

Schultze-Motel, Dr W., Königin Luisestrasse 6-8, Berlin-Dahlem (1959).

Schulze, Dr G. M., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem (1953).

Schulze-Menz, Dr G. K., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem (1956).

Spanowsky, Dr W., Institut für Botanik, Technische Hochschule, Zellescher Weg 40, Dresden A 20 (1954).

Straus, Dr A., Erkelenzdamm 7, Berlin-West SO 36 (PB) (1955).

Tischer, Dr A., Luisenstrasse 10, Heidelberg (1958).

Vent, Prof. W., Institut für Spezielle Botanik der Humboldt-Universität zu Berlin, Invalidenstrasse 43, Berlin N 4 (1959).

Wagenitz, Dr G., Botanischer Garten und Museum, Königin Luisestrasse 6-8, Berlin-Dahlem (1955).

Weberling, F., Botanisches Institut der Universität Mainz, Mainz (1960).

Wessner, W., Postfach 54, Höhr-Grenzhausen (1958).

Weyland, Prof. H., Nüllerstrasse 139, Wuppertal-Elberfeld (PB) (1955).

Wiemann, Dr P., Staatsinstitut für allgemeine Botanik, Jungiusstrasse 6, Hamburg 36 (1951).

Wilmanns, Dr O., Botanisches Institut der Universität Freiburg im Breisgau (1961).

Zimmermann, Prof. W., Institut für Angewandte Botanik, Wilhelmstrasse 5, Tübingen (1951).

Ghana

University College of Ghana, P.O. Box 25, Legon, Accra (1953).

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Noamesi, Dr G. K., Medical Field Units, Simulium Control Unit, P.O. Box 17, Lawra (1956).

Great Britain

National Institute of Agricultural Botany, Huntingdon Road, *Cambridge* (1954).

Botanic Garden, Cambridge (1957).

Botany School, Downing Street, *Cambridge* (1955).

Royal Botanic Garden, Edinburgh 4, Scotland (1956).

The Herbarium, Royal Botanic Gardens, Kew, Surrey (1952).

Commonwealth Mycological Institute, Ferry Lane, *Kew*, Surrey (1956).

Department of Botany, The University, *Leicester* (1961).

The Hartley Botanical Laboratories, University of Liverpool, *Liverpool* (1955).

General Library, British Museum of Natural History, Cromwell Road, *London S.W. 7* (1956).

The Linnean Society of London, Burlington House, Piccadilly, *London W. 1* (1953).

The Royal Horticultural Society, Vincent Square, *London S.W. 1* (1958).

Marine Station, Millport, Isle of Cumbrae (1959).

Department of Botany of the University, (Druce Herbarium), South Parks Road, *Oxford* (1952).

University Library, no. 9/578 (b) *Reading* (1955).

*

Adamson, Prof. R. S., The Brae, Jedburgh (1951).

Ainsworth, Dr G. C., Commonwealth Mycological Institute, Ferry Lane, Kew, Surrey (1953).

Alvin, Dr K. L., Imperial College of Science & Technology, Dept. of Botany, Prince Consort Road, London S.W. 7 (1957).

Austwick, P. K. C., Central Veterinary Laboratory, New Haw, Weybridge, Surrey (1960).

Balfour-Browne, Mrs F. L., M.Sc., British Museum of Natural History, Cromwell Road, London S.W. 7 (1952).

Ballard, F., B.Sc., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1952).

Barnett, Dr E. C., 120 Hamilton Place, Aberdeen (1957).

Blakelock, R. A., The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey (1957).

Booth, C., Commonwealth Mycological Institute, Ferry Lane, Kew, Surrey (1958).

Bowden, Miss Jean K., 20, Mortlake Road, Kew, Surrey (1961).

Brenan, J. P. M., M.A., B.Sc., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1952).

Brummitt, R. K., Hartley Botanical Laboratories, The University, Liverpool 3 (1959).

Bullock, A. A., B.Sc., F.L.S., The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey (1951).

Burnett, Prof. J. H., Dept. of Botany, King's College, Newcastle upon Tyne (1952).

Burrows, Dr E. M., Hartley Botanical Laboratories, The University, Liverpool 3 (1961).

Burtt, B. L., B.Sc., F.L.S., Royal Botanic Garden, Edinburgh 4 (1954).

Byles, R. S., c/o 19 Garrick Street, London W.C. 2 (1955).

Calder, Miss M. G., Dept. of Botany, The University, Manchester 13 (PB) (1955).

Chaloner, W. G., Botany Dept., University College, London, W.C. 1. (PB) (1958).

Clayton, Dr W. D., 2 Midway Avenue, Thorpe, Surrey (1959).

Cook, Dr C. D., Hartley Botanical Laboratories, The University, Liverpool (1959).

Crundwell, A. C., Dept. of Botany, The University, Glasgow W. 2 (1960).

Cullen, J., Department of Botany at Royal Botanic Garden, Inverleith Row, Edinburgh 3 (1959).

Dalby, Dr D. H., Dept. of Botany, Imperial College, Prince Consort Road, London S.W. 7 (1957).

Dandy, J. E., M.A., F.L.S., Dept. of Botany, British Museum (Natural History), Cromwell Road, London S.W. 7 (1951).

Davis, Dr P. H., Royal Botanic Garden, Edinburgh 4 (1955).

Deighton, F. C., Commonwealth Mycological Institute, Ferry Lane, Kew, Surrey (1958).

Dettmann, Miss Mary, Sedgwick Museum, Cambridge (PB) (1961).

Dixon, Dr P. S., The Hartley Botanical Laboratories, University of Liverpool, Liverpool (1952).

Donald, J. D., B.Sc., A.R.I.C., 48 Wicklands Avenue, Saltdean, Brighton, Sussex (1958).

Elphick, J. J., Commonwealth Mycological Institute, Ferry Lane, Kew, Surrey (1958).

Exell, A. W., M.A., F.L.S., British Museum (Natural History), Cromwell Road, London S.W. 7 (1952).

Forman, L. L., B.Sc., The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey (1952).

George, E. A., The Botany School, Downing Street, Cambridge (1952).

Gibby, Mrs A. N., Prebends' Gate, Quarry Heads Lane, Durham (1951).

Gillett, J. B., M.A., F.L.S., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1953).

Gilmour, J. S. L., M.A., F.L.S., Cory Lodge, Hills Road, Cambridge (1951).

Godward, Dr M., Queen Mary College, London E. 1 (1952).

Hamshaw Thomas, Dr H., Botany School, Cambridge (1954).

Harris, Prof. T. M., The University, Reading (PB) (1955).

Hawkes, Dr J. G., Dept. of Botany, The University, Edgbaston, Birmingham 15 (1953).

Hedge, I. C., Royal Botanic Garden, Edinburgh 3 (1961).

Heine, Dr H., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1952).

Hepper, F. N., B.Sc., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1953).

Heywood, Dr V. H., The Hartley Botanical Laboratories, The University, Liverpool 3 (1951).

Holttum, Prof. R. E., Kew Gardens, 80 Mortlake Road, Kew, Surrey (1951).

Hooper, M. D., B.Sc., Ph.D., Wye College, Near Ashford, Kent (1960).

Hoyle, A. C., Dept. of Botany, The University, Oxford (1952).

Hubbard, C. E., O.B.E., F.L.S., The Herbarium, Royal Botanic Gardens, Kew Surrey (1956).

Hughes, N. F., Sedgwick Museum, Cambridge (PB) (1955).

Hunt, P. F., M.Sc., Ike Herbarium, Royal Botanic Gardens, Kew, Surrey (1959).

Hutchinson, Dr J., The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey (1956).

Hyde, H. A., M.A., F.L.S., National Museum of Wales, Cardiff, Wales (1951).

Irvine, Mrs D. E. G., 2 Eaton Court, Eaton Road, Sutton, Surrey (1952).

James, P. W., Botany Department, British Museum of Natural History, Cromwell Road, London S.W. 7 (1958).

Jarrett, Dr F. M., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1957).

Jermy, A. C., British Museum of Natural History, Cromwell Road, London S.W. 7 (1958).

Jones, B. M. G., Department of Botany, Queen Mary College, London E. 1 (1959).

Kent, D. H., 75 Adelaide Road, West Ealing, London W. 13 (1951).

Knox, Dr E. M., 43 Dalhousie Ter., Edinburgh 10 (1955).

Lacey, Dr W. S., Dept. of Botany, University College, Bangor, Caerns., Wales (1956).

Launert, Dr E., British Museum (Natural History), Cromwell Road, London S.W. 7 (1958).

Laycock, T. R., B.Sc., 4 Leaford Avenue, Denton, near Manchester, Lancashire (1951).

Lewis, J., B.Sc., British Museum (Natural History), Cromwell Road, London S.W. 7 (1952).

Lodge, Dr E., Department of Botany, Royal Holloway College, Englefield Green, Surrey (1960).

Long, A. G., The Green, Gavinton, Duns, Berwickshire (PB) (1961).

Lousley, J. E., 7 Penistone Road, Streatham, London S.W. 16 (1952).

Lucas, G. L., The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey (1960).

Lund, Dr J. W. G., Freshwater Biological Association, The Ferry House, Far Sawrey, Ambleside, Westmoreland (1951).

Lyon, Dr A. G., Department of Botany, University College, Newport Road, Cardiff (PB) (1960).

McNeill, Dr J., Hartley Botanical Laboratories, The University, Liverpool 3 (1958).

Mason, E. W., F.L.S., Commonwealth Mycological Institute, Ferry Lane, Kew, Surrey (1956).

Meikle, R. D., B.A., LL.B., F.L.S., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1951).

Melderis, Dr A., British Museum (Natural History), Cromwell Road, London S.W. 7 (1951).

Melville, Dr R., F.L.S., Royal Botanic Gardens, Kew, Surrey (1952).

Metcalfe, Dr C. R., F.L.S., Jodrell Laboratory, Royal Botanic Gardens, Kew, Surrey (1952).

Milne-Redhead, E., T.D., M.A., F.L.S., 7 Ashley Gardens, Petersham, Richmond, Surrey (1951).

Muirhead, Miss C. W., Royal Botanic Garden, Edinburgh 4 (1951).

Pallot, Miss Jane M., 50 West Cromwell Road, London S.W. 5 (PB) (1961).

Palmer, J. T., The Hartley Bot. Laboratories, The University of Liverpool, Liverpool (1960).

Parke, Dr M. A., The Laboratory, Citadel Hill, Plymouth (1957).

Playford, G., Sedgwick Museum, Cambridge (PB) (1960).

Powell, H. T., Marine Station, Millport, Isle of Cumbrae, Scotland (1957).

Ramsbottom, Dr J., O.B.E., F.L.S., British Museum (Natural History), Cromwell Road, London S.W. 7 (1951).

Robson, Dr N. K. B., The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey (1958).

Ross, R., M.A., F.L.S., British Museum (Natural History), Cromwell Road, London S.W. 7 (1951).

Rosser, Dr E. M., National Institute of Agricultural Botany, Huntingdon Road, Cambridge (1952).

Rowley, G. D., Botany Department, The University, Reading (1952).

Sandwith, N. Y., M.A., F.L.S., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1952).

Shurly, E. W., 7 Deacons Hill Road, Elstree, Herts. (1958).

Simpson, N. D., 3 Cavendish Rd., Bournemouth (1951).

Sledge, Dr W. A., The University, Leeds 2 (1955).

Smith, Dr. A. J. E., Dept. of Botany, University College of Swansea, Singleton Park, Swansea, Glamorgan (1961).

Sprague, Mrs M. L., 7 Hatherley Road, Cheltenham, Glos. (1951).

Stearn, Dr Wm. T., F.L.S., 217 Mortlake Road, Kew, Surrey (1951).

Stern, Sir Col. F. C., O.B.E., M.C., F.L.S., Highdown, Goring by Sea, Sussex (1951).

Styles, Dr B. T., Forest Herbarium, Department of Forestry, Imperial Forestry Institute, University of Oxford, Oxford (1961).

Summerhayes, V. S., B.Sc., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1954).

Sylvester-Bradley, Prof. P. C., Dept. of Geology, The University of Leicester, Leicester (1953).

Taylor, Dr G., Royal Botanic Gardens, Kew, Surrey (1951).

Tennant, J. R., B.Sc., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1956).

Townsend, C. C., Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey (1960).

Turrill, Dr W. B., F.L.S., The Herbarium, Royal Botanic Gardens, Kew, Surrey (1951).

Tutin, Prof. T. G., F.L.S., University College, Leicester (1951).

Valentine, Prof. D. H., Dept. of Botany, University Science Laboratories, South Road, Durham (1954).

Wagner, R. H., Dept. of Geology, University of Sheffield, St. George's Square, Sheffield 1 (PB) (1955).

Wakefield, Miss E. M., 20 Castlegate, Richmond, Surrey (1955).

Walters, S. M., Botany School, Downing Street, Cambridge (1951).

Walton, Prof. J., Dept. of Botany, The University, Glasgow W. 2 (PB) (1951).

Warburg, Dr E. F., South Hayes, Yarnells Hill, Oxford (1952).

Wesley, A., Dept. of Botany, The University, Leeds 2 (PB) (1958).

White, F., M.A., Dept. of Forestry, Imperial Forestry Institute, South Parks Road, Oxford (1954).

Whitmore, T. C., Botany School, Downing Street, Cambridge (1960).

Hungary

Greguss, Prof. P., Botanical Institute of the University, Szeged (PB) (1955).

Rásky, Dr K., Lovas ut 23, Budapest I (PB) (1955).

Iceland

Einarsson, E., M.Sc., Museum of Natural History, Department of Botany, P.O. Box 532, Reykjavík (1959).

India

Central Botanical Laboratory, W. Chatham Lines, Prayag, *Allahabad*, U.P. (1957).

Indian Botanic Garden, P.O. Botanic Garden, *Calcutta* (1952).

Botanical Survey of India, Ministry of Scientific Res. & Cult. Affairs, Office of the Chief Botanist, 14 Madan Street, *Calcutta 13* (1959).

National Botanic Gardens, Lucknow (1954).

Birbal Sahni Institute of Palaeobotany, P.O. Box 106, *Lucknow*, U.P. (1957).

Maharana Bhupal College, Udaipur (1955).

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Agharkar, Dr S. P., Maharastra Association for the Cultivation of Science, Poona 4 (1951).

Bhandari, M. M., Department of Botany, Jaswant College, Jodhpur (1960).

Bharadwaja, Prof. Y., Banaras Hindu University, Banaras 5, U.P. (1952).

Bole, Prof. P. V., A/15/58, Government Tenements, Goregaon, Bombay (S.D.) (1957).

Chennaveeraiah, Dr M. S., Karnatak Science College, Dharwar (Mysore State) (1959).

Chitaley, Dr S., Botany Department, Govt. College of Science, Nagpur (PB) (1958).

Chopra, Dr R. S., Botany Department, Panjab University, Khalsa College, Amritsar (1960).

Chowdhury, Prof. K. A., Dept. of Botany, Aligarh University, Aligarh (1961).

Darshan Pant, Dr D., Botany Department, The University, Allahabad (PB) (1956).

Gangulee, H. C., Cryptogamic Laboratory, Dept. of Botany, Presidency College, Calcutta-12 (1960).

Ghosh, A. K., Sr., Oil & Natural Gas Commission, 19-Rajpur Road, Dehra Dun (PB) (1960).

Govindarajalu, E., Dept. of Botany, Presidency College, Madras 5 (1960).

Herbert, P. S., Blatter Herbarium, St. Xavier's College, Bombay (1957).

Jain, Dr S. K., Central Botanical Laboratory, 10, Chatham Lines, Allahabad (1959).

Janaki Ammal, Dr E. K., Regional Research Laboratory, Jorhat, Assam (1952).

Kaul, Dr K. N., National Botanic Gardens, Lucknow (1954).

Mehra, Prof. P. N., University Botany Department, Khalsa College, Amritsar (1959).

Oza, G. M., Salat Wada, "OZA Building", Kothi Avenue Road, Baroda (1958).

Pallithanam, Rev. J., S. J., St. Xavier's High School, Bombay-1 (1958).

Panthaki, Miss D. P., Wadia Buiding, Princess Street, Bombay 2 (1957).

Prakash, Dr U., Birbal Sahni Institute of Paleobotany, 53 University Road, Lucknow (1960).

Puri, Prof. V., Dept. of Botany, Meerut College, Meerut (1955).

Raizada, Dr M. B., Botany Branch, Forest Research Inst., P.O. New Forest, Dehra Dun (1953).

Raju, D. C. S., Botanical Survey of India, Shillong (1960).

Rao, Dr A. S., Dept. of Botany, Govt. College, Mercara, Mysore State (1955).

Rao Rolla, S., Botanical Survey of India, 7-Koregaon Road, Moti Mansion, Poona-1 (1957).

Santapau, Dr H., St. Xavier's College, Fort, Bombay 1 (1954).

Sen, Dr J., Dept. of Botany, University College of Science, 35 Ballygunge Circular Road, Calcutta 19 (PB) (1955).

Sharma, V. S., 'Herbarium', Dept. of Botany, Govt. College, Ajmer (Raj.) (1960).

Subramanian, Prof. C. V., M.A.Ph.D., D.Sc., F.N.I., F.A.Sc., Dept. of Botany, University of Rajasthan, Jodhpur (1960).

Swamy, Prof. B. G. L., Presidency College, Madras 5 (1960).

Varma, Dr C. P., 19, Rajpur Road, Dehra Dun (PB) (1959).

Venkatachary, Prof. S., Botany Department, Dungar College, Bikaner, Rajasthan (PB) (1955).

Wight, Dr W., Tocklai Experimental Station, Cinnamara P.O., Assam (1956).

Indonesia

U.N.E.S.C.O., Southeast Asia Science Corporation Office (for: Bibliotheca Bogoriensis), Djalan Diponegoro 76 (P.O. Box 2313), *Djakarta* (1957).

Dilmy, A., Keeper of the Herbarium Bogoriense, Bogor (1958).

Kostermans, Dr A. J. G. H., Herbarium Bogoriense, Djalan Raya 22, Bogor (1951).

Iran

Parsa, Prof. A., Muzeyeh Olum-Tabyi (Dabestan Nezami), Avenue Sepah, Teheran (1953).

Iraq

Barkley, Dr F. A., Dept. of Botany, College of Agriculture, University of Baghdad, Baghdad (1959).

Ireland

Walsh, Dr Th. J., Botanic Gardens, Glasnevin, Dublin (1951).

Webb, Prof. D. A., School of Botany, Trinity College, Dublin (1951).

Israël

Feinbrunn, Dr N., Hebrew University, Dept. of Botany, Jerusalem (1952).

Heyn, C. C., Dept. of Botany, The Hebrew University, Jerusalem (1961).

Lorch, Dr J., Dept. of Botany, The Hebrew University, Jerusalem (PB) (1961).

Zohary, Prof. M., Hebrew University, Dept. of Botany, Jerusalem (1952).

Italy

Ciferri, Prof. R., Istituto Botanico dell' Università, P.O.B. 165, Pavia (1951).

Charrier, Dr G., Istituto di Giacimenti Minerari del Politecnico, Corso Duca degli Abruzzi 24, Torino (PB) (1961).

Concetto, D., Via Stagno no. 20, Catania (1958).

Fenaroli, Prof. Dr L., Staz. Sper. Maiscoltura, P.O. Box 164, Bergamo (1961).

Francini-Corti, Prof. E., Istituto Botanico dell' Università, Via Salerno 165A, Bari (1952).

Giacomini, Prof. V., Istituto Botanico dell' Università, Via Foria, 223, Napoli (1951).

Moggi, Dr G., Herbarium Universitatis Florentinae, Istituto Botanico, Via Lamarmora N. 4, Firenze (1958).

Pichi-Sermolli, Prof. R. E. G., Istituto Botanico "Hanbury", Università di Genova, Via Balbi 5, Genova (1951).

Ivory Coast

Bodard, J., C. R. A. Bingerville, French W. Africa (1954).

Jamaica

Library, University College of the West Indies, Mona (1961).

*

Proctor, G. R., Science Museum, Institute of Jamaica, Kingston (1959).

Japan

Japan Society of Plant Taxonomists, c/o Dr H. Hara, Botanical Institute, Faculty of Science, University of Tokyo, Hongo, Tokyo (1952).

*

Akiyama, Prof. S., Dept. of Botany, Faculty of Science, Hokkaido University, Sapporo (1954).

Ando, H., Botanical Institute, Hiroshima University, Higashisenda-machi, Hiroshima (1958).

Hara, Prof. H., Botanical Institute, Faculty of Science, University of Tokyo, Hongo, Tokyo (1951).

Hattori, Dr S., Hattori Botanical Laboratory, Obi-Machi, Nichinan, Miyazaki Pref., Kyushu (1952).

Hisauchi, Prof. K., Pharmaceutical Institute, Tôhô University, Narashino, Chiba Pref. (1953).

Horikawa, Prof. R., Botanical Institute, Faculty of Science, Hiroshima University, Hiroshima (1954).

Huzioka, K., Institute of Mining Geology, Mining College, Akita (PB) (1961).

Ichikawa, W., Geological Institute, College of Science, Kanazawa University, Kanazawa (PB) (1958).

Inagaki, Prof. K., Asahigawa Branch, Hokkaido, Gakugei University, 9 chome, Hokumon-cho, Asahigawa City, Hokkaido (1953).

Iwatsuki, Z., Hattori Botanical Laboratory, Obi, Nichinan-Shi (1961).

Kamimura, Dr M., Biological Laboratory, Marunouchi High School, 2 Marunouchi, Kochi-City (1960).

Kitamura, Prof. S., Botanical Institute, Faculty of Science, Kyoto University, Kyoto (1956).

Konishi, K., Department of Geology, Faculty of Science, Kanazawa University, Kanazawa (PB) (1958).

Koyama, T., Botanical Institute, Faculty of Science, Hongo, Tokyo (1960).

Matsumura, Dr Y., Societas Herbaria Orientali-Asiatica, c/o Shoei Junior College, Nakayamate 6-Chome, Ikutaku, Kobe (1955).

Mizushima, M., M.Sc., Makino Herbarium, Metropolitan University, Fukazawa-1, Setagaya, Tokyo (1960).

Nakamura, Prof. J., Literature and Science Faculty, Kochi University, Kochi (PB) (1958).

Nakamura, Dr Y., Seaside Laboratory of the Institute of Algological Research, Faculty of Science, Hokkaido University, Funamicho, Muroran City, Hokkaido (1953).

Noguchi, Prof. A., Botanical Institute, Faculty of Science, Kumamoto University, Kumamoto (1960).

Ochi, Dr H., Biological Institute, Tottori University, 1, Tachikawa-cho, Tottori City (1957).

Ogura, Y., 1542, Ikebukuro 3-chome, Toshimaku, Tokyo (PB) (1960).

Ohwi, Dr J., National Science Museum, Ueno Park, Tokyo (1955).

Oku, H., 6-270 Sekimachi, Nerima-ku, Tokyo (1958).

Sato, Prof. M., Biological Institute, Faculty of Liberal Arts and Science, Ibaraki University, Mito (1952).

Sohma, Dr K., Biological Institute, Tohoku University, Sendai (PB) (1961).

Suzuki, M., Biological Institute, Faculty of Liberal Arts and Sciences, Ibaraki University, Mito (1957).

Suzuki, N., Dept. of Geology and Mineralogy, Faculty of Science, Hokkaido University, Sapporo (PB) (1961).

Takahashi, K., Department of Geology, Kyushu University, Fukuoka (PB) (1961).

Takaki, Dr N., Biological Institute, Dept. of General Education, Nagoya University, Mizuho-ku, Nagoya (1961).

Tateoka, Dr T., National Institute of Genetics, Misima, Sizuoka-ken (1960)

Tokunaga, Dr S., Geol. Survey of Japan, Tokyo Branch, 8-Kawadacho, Shinjuku-ku, Tokyo (PB) (1961).

Toshimasa Tanai, Dr, Dept. of Geol. and Miner., Faculty of Science, Hokkaido University, Sapporo (PB) (1961).

Toyokuni, Prof. H., Botanical Institute, Faculty of Science, Hokkaido University, Sapporo (1960).

Tuyama, Prof. T., Faculty of Science, Ochanomizu University, Bunkyo-ku, Tokyo (1953).

Umezaki, I., Dept. of Fisheries, Kyoto University, Maizuru (1957).

Watari, S., Department of Botany, Faculty of Science, University of Tokyo, Tokyo (PB) (1960).

Yamada, Prof. Y., Dept. of Botany, Faculty of Science, Hokkaido University, Sapporo (1953).

Jordan

Waldee, Dr E. L., U.S. Operations Mission to Jordan, American Embassy, Amman (1951).

Kenya

Greenway, Dr P. J., O.B.E., F.L.S., P.O. Box 20209, Nairobi, Kenya Colony, E. Africa (1951).

Madagascar

Rakotoarivelo, H. J., Petit Séminaire, Tananarive (PB) (1960).

Malaya

Forest Research Institute, Kepong, Selangor (1953).

Keng, Dr H., Dept. of Botany, Univ. of Malaya, Singapore 10 (1960).

Turnau, Dr E. A., Dept. of Botany, University of Malaya, Pantai Valley, Kuala Lumpur (1951).

Marocco

Institut Scientifique Chérifien, Avenue Biarnay, *Rabat* (1951).

Sauvage, Ch., Institut Scientifique Chérifien, Rabat (1951).

Mauritius

Vaughan, Dr R. E., Phoenix (1953).

Mexico

Palacios Rincón, M. A., Instituto Botánico de Chiapas, l/a Avenida Sur no. 42, Apdo 24, Tuxtla Gutiérrez, Chiapas (1955).

Rojas M., Dr P., Sección de Botánica, Escuela de Agricultura, Instituto Tecnológico, Sucursal de Correos "J", Monterrey, N.L. (1959).

Rzedowski, J., Laboratorio de Botánica, Universidad Autónoma de San Luis Potosí, San Luis Potosí, S.L.P. (1959).

Téllez, R., Ave. Mariano Escobedo 339, 5° piso, México 5, D.F. (1954).

Monaco

Vatrican, L. F., Jardin Exotique, Boîte Postale 1, Monaco-Ville (1958).

Mozambique

Pedro, J. G., c/o Junta de Exportaçao do Algodão Colonial, P.O. Box 1073, Lourenço Marques, E. Africa (1951).

Netherlands

Hugo de Vries-laboratorium, Plantage Middenlaan 2a, *Amsterdam-C.* (1961).

Centraal Bureau voor Schimmelcultures, Javalaan 20, *Baarn* (1959).

Botanisch Laboratorium, afd. Plantensystematiek, Grote Rozenstraat 31, *Groningen* (1961).

Geologisch en Mineralogisch Instituut der Rijksuniversiteit te Leiden, Garenmarkt, *Leiden* (1961).

Rijksherbarium, Nonnensteeg 1, *Leiden* (1951).

Botanisch Museum en Herbarium, Lange Nieuwstraat 106, *Utrecht* (1951).

Laboratorium voor Plantensystematiek en -geographie, Gen. Foulkesweg 37, *Wageningen* (1955).

Adelbert, A. G. L., Bankastraat 1, Den Haag (1952).

Amshoff, Dr G. J. H., Utrechtsestraat 194, Oosterbeek (1951).

Andreas, Dr Ch. H., Botanisch Laboratorium, Grote Rozenstraat 31, Groningen (1951).

Bakhuizen van den Brink, Dr R. C., Rijksherbarium, Nonnensteeg 1, Leiden (1951).

Barkoudah, Y., Pelmolenplantsoen 4, Utrecht (1958).

Bergmans, J., Nic. v. Eschstraat 42, Oisterwijk (1952).

Beumée, Dr J. G. B., Edeseweg 72, Bennekom (1951).

Boom, Dr B. K., Prof. v. Uvenweg 298, Wageningen (1951).

Borssum Waalkes, J. van, Eyssoniusstraat 21, Groningen (1951).

Bremekamp, Prof. C. E. B., Ostadelaan 14, Bilthoven (1951).

Breteler, Ir F. J., Van Randwyckweg 19, Beek bij Nijmegen (1960).

Brouwer, Dr A., Garenmarkt 1, Leiden (PB) (1960).

Brummelen, J. van, Hyacinthenlaan 25, Haarlem (1959).

Buining, A. F. H., Burg. de Beaufortweg 10, Leusden (1958).

Dijkstra, S. J., Geol. Bureau v. h. Mijngebied, Akerstraat 88, Heerlen (PB) (1960).

Donk, Dr M. A., Wassenaarseweg 265, Den Haag (1952).

Florschütz, P. A., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Fuchs, Dr H. P., Clematislaan 61, Wassenaar (1954).

Groenhart, P., Rijksherbarium, Nonnensteeg 1, Leiden (1951).

Hegnauer, Prof. R., Pharmaceutisch Laboratorium, Hugo de Grootstraat 32, Leiden (1957).

Heimans, Prof. J., Quinten Matsijsstraat 4, Amsterdam (1951).

Hekking, W. H. A., St. Annastraat 299, Nijmegen (1955).

Hoog, Th., "Zwanenburg", Koninginneweg 86, Haarlem (1955).

Hou, Dr D., c/o Rijksherbarium, Nonnensteeg 1, Leiden (1955).

Janse, J. A., van Ittersumlaan 32, Bennebroek (1958).

Jonker, Prof. F. P., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Kalkman, C., Scholtenstraat 68, Leiden (1953).

Kern, J. H., Rijksherbarium, Nonnensteeg 1, Leiden (1952).

Koster, Dr J. Th., Warmonderweg 48, Oegstgeest (1951).

Kramer, Dr K. U., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1953).

Kruseman, Dr G., Zoölogisch Museum, Afd. Entomologie, Zeeburgerdijk 21, Amsterdam (1951).

Lam, Prof. H. J., Rijksherbarium, Nonnensteeg 1, Leiden (1951).

Lanjouw, Prof. J., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Leeuwenberg, Dr A. J. M., Laboratorium voor Plantensystematiek, Gen. Foulkesweg 37, Wageningen (1954).

Lindeman, Dr J. C., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Maas Geesteranus, Dr R. A., Rijksherbarium, Nonnensteeg 1, Leiden (1951).

Margadant, W. D., Botanisch Laboratorium, Grote Rozenstraat 31, Groningen (1954).

Meeuse, Prof. Dr A. D. J., Hugo de Vries-laboratorium, Plantage Middenlaan 2a, Amsterdam-C. (1961).

Mennega, Dr A. M. W., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Mennega, E. A., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).

Ooststroom, Dr S. J. van, Rijksherbarium, Nonnensteeg 1, Leiden (1952).

Payens, J. P. D. W., Huis te lande laan 384, Rijswijk, Z.H. (1961).

Punt, W., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1958).

Roon, A. C. de, Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1954).

Royen, Dr P. van, Rijksherbarium, Nonnensteeg 1, Leiden (1951).
Sleumer, Dr H., Rijksherbarium, Nonnensteeg 1, Leiden (1951).
Soest, Prof. J. L. van, van Soutelandelaan 35, Den Haag (1951).
Stafleu, Dr F. A., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).
Steenis, Prof. C. G. G. J. van, Rijksherbarium, Nonnensteeg 1, Leiden (1951).
Stoffers, Dr A. L., Botanisch Laboratorium, Driehuizerweg 200, Nijmegen (1951).
Stoutjesdijk, Dr P., Biologisch Station, Oostvoorne (1951).
Swart, Dr J. J., Botanisch Museum, Lange Nieuwstraat 106, Utrecht (1951).
Uitewaal, A. J. A., Alex. Boersstraat 25*huis*, Amsterdam (1958).
Verdoorn, Prof. F., Biohistorisch Instituut, Nieuwe Gracht 187, Utrecht (1951).
Vermeulen, Dr P., Wodanstraat 14, Amsterdam (1951).
Vroman, M., Botanisch Laboratorium V.U. Rapenburgerstraat 128, Amsterdam-Centrum (1953).
Wagenaar Hummelinck, Dr P., Sweelinckklaan 84, Bilthoven (1951).
Wassenberg, P., Hertogsingel 87A, Maastricht (1951).
Westra, L. Y. Th., Palestrinalaan 12, Bilthoven (1957).
Wit, Prof. H. C. D. de, Doorwerthsestraat 10, Heelsum (1951).
Wijk, Prof. R. v. d., Botanisch Laboratorium, afd. Plantensystematiek, Grote Rozenstraat 31, Groningen (1951).
Zanten, Dr B. O. van, Botanisch Laboratorium, Grote Rozenstraat 31, Groningen (1959).

New Guinea (Austr.)

Womersley, Dr J. S., Department of Forests, Lae (1953).

New Zealand

The Librarian, Dominion Museum, Wellington (1959).

Cooper, R. C., Auckland Museum, P.O. Box 9027, Newmarket, Auckland (1951).
Hamlin, B. G., Dominion Museum, Private Bag, Wellington (1957).
Moar, N. T., Botany Division, D.S.I.R., Christchurch (PB) (1960).
Moore, Miss L. B., Botany Division, D.S.I.R., Private Bag, Christchurch (1954).
Stoneley, Mrs H. M. M., c/o BP-Shell & Todd Co. Ltd., "Braeburn", 65 Wainui Road, Gisborne, North Island (PB) (1956).
Taylor, Miss J., Botany Division, D.S.I.R., Private Bag, Christchurch (1952).

Nigeria

Forest Research, Ibadan (1952).

Hopkins, B., B.Sc., Ph.D., Dept. of Botany, University College, Ibadan (1956).
Keay, R. W. J., M.A., F.L.S., Federal Department of Forest Research, Ibadan (1952).

Norway

Universitetets Botaniske Museum, Trondheimsveien 23a, *Oslo* 45 (1951).

Berg, R. Y., Botanisk Museum, Oslo (1956).
Dahl, Dr E., Botanisk Institutt, Vollebekk (1959).
Eckblad, F. E., University Botanical Garden, Trondheimsveien 23b, Oslo (1957).
Faegri, Prof. K., Botanisk Museum, Bergen (1951).
Gjaerevoll, O., Dept. of Botany, Museum of the Royal Norwegian Society for Science and Letters, Trondheim (1951).
Hagen, A., Løvenskioldsgt. 4, Oslo (1951).
Hoeg, Prof. O. A., Universitetets farmasoitiske Institut, Oslo-Blindern (1953).
Lid, J., Botanisk Museum, Oslo 45 (1951).
Manum, S., Institutt for Geologi, Universitetet, Blindern, Oslo (PB) (1960).
Rønning, Dr O. I., Tromsø Museum, Tromsø (1953).
Thorsrud, Dr A., Institutt for Blomsterdyrkning, Vollebekk (1957).
Wendelbo, P., Botanisk Museum, Bergen (1956).

Pakistan

Hossain, Dr M., c/o The Department of Botany, Dacca University, Dacca (1959).

Peru

Museo de Historia Natural "Javier Prado", Avenida Arenales 1256 P.O.B. 1109, Lima (1951).

Soukup, J., Box 999, Lima (1955).
Velarde, Dr O., University of S. Marcos, Dept. of Botany, Lima (1961).

Philippines

Bardenas, Dr E. A., Dept. of Botany, College of Agriculture, University of the Philippines College, Laguna (1960).

Mendoza, D. R., Director, National Museum, Manila (1959).

Pancho, J. V., Department of Agricultural Botany, Central Experiment Station, University of the Philippines College, Laguna (1959).

Quisumbing, Dr E., National Museum, Herran & Taft Avenue Sts., Manila (1951).

Santos, Dr J. V., Dept. of Botany, College of Liberal Arts, University of the Philippines, Quezon City (1952).

Steiner, Dr M. L., 419 Park Avenue, Pasay (1953).

Velasquez, Dr G. T., Dept. of Botany, University of the Philippines, Diliman, Rizal (1957).

Poland

Institutum Botanicum, Academiae Scientiarum Polonae, Lubicz 46, *Kraków* (1957).

*

Gajewski, Prof. W., Botanical Garden, Warszawa (1960).

Kownas, Prof. S., Biblioteca Glowna Wyzszej, Szkoly Rolniczej, ul. Janosika 8, Szczecin (PB) (1961).

Pawlowski, Prof. B., Lobrowska 59, Kraków (1957).

Portugal

Jardim e Museu Agricola do Ultramar, Calçada do Galvão, *Belém-Lisboa* (1952).

Museu Botânico de Lisboa, Faculdade de Ciencias, *Lisboa* (1952).

*

Amaral Franco, Prof. J. M. A. P. do, 82 Rua Presidente Arriaga, Lisboa (1951).

Carvalho e Vasconcellos, Prof. J. de, Instituto Superior de Agronômia, Lisboa (1951).

Fernandes, Prof. Dr A., Instituto Botânico da Universidade de Coimbra, Coimbra (1951).

Malato Beliz, J., Laboratório de Botânica, Estação de Melhoramento de Plantas, Elvas (1951).

Pinto da Silva, A. R., Estação Agronômica Nacional, Sacavem (1951).

Tavares, Dr C. N., Instituto Botânico, Faculdade de Ciencias, Lisboa (1951).

Puerto Rico

Almodovar, L. R., Institute of Marine Biology University of Puerto Rico, Mayaguez (1958).

Díaz-Piferrer, Prof. M., Department of Biology, University of Puerto Rico, Mayaguez (1958).

Singapore

Dept. of Botany, University of Malaya, Cluny Road, *Singapore 10* (1951).

Botanic Gardens, Singapore 10 (1957).

*

Sinclair, J., Botanic Gardens, Singapore 10 (1956).

S. Rhodesia

Federal Herbarium, Branch of Botany and Plant Pathology, Federal Ministry of Agriculture, P.O. Box 8100, Causeway, *Salisbury* (1959).

*

Boughey, Prof. A. S., University College of Rhodesia and Nyasaland, Private Bag 167 H, Salisbury (1956).

Greatrex, F. C., 8 Queen's Gate Hats, Baines Avenue & Fifth Street, Causeway, Salisbury (1955).

Roan, H. M., P.O. Box 287, Bulawayo (1959).

Wild, Dr H., Branch of Botany and Plant Pathology, Federal Ministry of Agriculture, P.O. Box 8100, Causeway, Salisbury (1952).

Spain

Instituto Antonio José Cavanilles, Plaza Murillo 2, *Madrid* (1953).

Instituto Forestal de Investigaciones y Experiencias, Apartado de Correos 8.111, *Madrid* (1956).

*

Bellot, F., Catedratico de Botánica, Universidad de Santiago de Compostela, Santiago de Compostela (1951).

Bolós, Prof. A. de, Instituto Botánico de Barcelona, Parque de Montjuic, Barcelona (1951).

Fernandez Galiano, Prof. D., Av. de los Toreros, 67, 2°-izq., Madrid (1958).

Lainz, Dr M., Universidad Laboral, Gijón (1953).

Panella Bonastre, J., Constitucion 155, Barcelona (1958).

Riviere de Caralt, F., 58 Ronda San Pedro, Barcelona (1958).

Sudan

Beshir, B., Gezira Research Farm, Wad Medani (1957).

MacLeay, Dr K. N. G., Gordon Memorial College, P.O. Box 321, Khartoum (1953).

Sweden

Botaniska Trädgården, Göteborg (1951).

Botaniska Museet, Lund (1951).

Botaniska Avd., Naturhistoriska Riksmuseet, Stockholm 50 (1955).
International Documentation Centre AB, Hågelby Hus, *Tumba* (1961).
Institutionen för Systematisk Botanik, Uppsala I (1960).

Ahler, Dr S., Botaniska Avd., Naturhistoriska Riksmuseum, Stockholm 50 (1951).
Almhorn, Dr O., Botaniska Museet, Lund (1951).
Almestrand, Dr A., Botaniska Laboratoriet, Ö. Vallgatan 14, Lund (1957).
Andersson, O., Drottninggatan 9, Karlskrona (1952).
Asplund, Prof. E., Botaniska Avd., Naturhistoriska Riksmuseum, Stockholm 50 (1952).
Dahlgren, R., Botaniska Museet, Lund (1956).
Degelius, Dr G., Botaniska Trädgården, Göteborg C (1952).
Du Rietz, Prof. G. E., Växtbiologiska Institutionen, Villavägan 14, Uppsala 8 (1954).
Erdtman, Prof. G., Palynological Laboratory, Nybodagatan 5, Stockholm-Solna (PB) (1951).
Florin, Prof. R., Bergianska Trädgården, Stockholm 50 (PB) (1951).
Fries, Prof. R. E., Floragatan 3, Stockholm (1951).
Harling, Dr G., Bergianska Trädgården, Stockholm 50 (1952).
Hässler, A., Ö. Vallgatan 39, Lund (1951).
Hedberg, Dr K. O., Botaniska Museet, Uppsala 1 (1952).
Hjelmqvist, Dr H., Botaniska Museet, Lund (1951).
Holm, L., Botaniska Museet, Uppsala 1 (1951.)
Hylander, N., Botaniska Museet, Uppsala 1 (1951).
Jonsell, B., Institute of Systematic Botany, P.O. Box 123, Uppsala 1 (1961).
Larsson, B. M. P., Institute of Plant Ecology, University of Uppsala, Villavägen 14, Uppsala (1959).
Lövkvist, Dr B., Cytotaxonomical Laboratory, Botanical Institute, Lund (1960).
Lundblad, Dr B., Geologiska institutionen, Stockholms Högskola, Kungstensgatan 45, Stockholm Va. (PB) (1951).
Lundqvist, N., Universitetes Institutionen för Systematisk Botanik, Uppsala 1 (1960).
Mårtensson, Dr O., Trädgårdsgatan 10, Uppsala (1959).
Mattisson, K. H., S. Kronoborgsvägen 10A, Malmö (1951).
Nannfeldt, Prof. J. A., Botaniska Museet, Uppsala 1 (1951).
Norlindh, Dr T., Botaniska Museet, The University, Lund (1951).
Nyholm, Mrs E., Institute of Systematic Botany, Lund (1960).
Peterson, B. H., Botaniska Trädgården, Göteborg SV. (1951).
Pettersson, B., Adelsgatan 2, Visby (1951).
Runemark, Dr H., Botaniska Museet, Lund (1952).
Santesson, Dr R., Institute of Systematic Botany, Uppsala (1951).
Segelberg, Prof. I., Stenungsundsgatan 20, Göteborg ö (1958).
Selling, Prof. O. H., Palaeobotaniska Avd., Naturhistoriska Riksmuseet, Stockholm 50 (PB) (1955).
Skarby, Dr A., Geologiska Institutet, Stockholms Universitet, Kungstensgatan 45, Stockholm (1960).
Skottsberg, Prof. C., Apotekaregatan 8, Göteborg (1951).
Weimarck, Prof. H., Botaniska Museet, Institute of Systematic Botany, Lund (1951).
Willén, T., Institute of Systematic Botany, P.O. Box 123, Uppsala (1960).

Switzerland

Botanische Anstalt der Universität Basel, Schönbeinstrasse 6, *Basel* (1960).
Institut et Jardin botaniques de l'Université, Altenbergrain 21, *Bern* (1951).
Nomenklaturkommission des Schweizerischen Gartenbaues, Münsingen - Bern (1953).
Conservatoire botanique de la Ville de Genève, 192 Route de Lausanne, *Genève* (1951).
Musée de Botanique, Palais de Rumine, *Lausanne* (1951).
Botanischer Garten und Bot. Museum der Universität Zürich, Pelikanstrasse 40, *Zürich* (1952).
Aellen, P., Mittlere Strasse 139, Basel (1951).
Baehni, Prof. Ch., Conservatoire Botanique, 192 Route de Lausanne, Genève (1951).
Buchmann-Felber, H. E., Sunnehalde, Feldmeilen (1958).
Daepp, H. P., Münsingen - Bern (1951).
Eichenberger, Dr E., c/o Mittelschule Dr Buchmann, Keltenstrasse 11, Zürich (1958).
Favarger, Prof. C., Institut de Botanique, Université de Neuchatel, Neuchatel (1961).
Hantke, Dr R., im Gsteig, Uerikon/Stäfa, Zürich (PB) (1960).
Huber-Morath, Dr A., Salinenstrasse 17, Basel (1952).
Huysman, H. S. C., Bôle (Ne.) (1957).

Krainz, H., Mythenquai 88, Zürich 2 (1958).
Markgraf, Prof. Dr F., Botanischer Garten und Botanisches Museum der Universität Zürich, Pelikanstrasse 40, Zürich (1951).
Maurizio, Dr A., Eidg. Versuchsanstalt, Bienenabteilung, Liebefeld/Bern (1951).
Moll, H. G., Gartendörfli, Gotenbach, Sihltal-Zürich (1958).
Stauffer, Dr H. U., Botanischer Garten und Institut für Syst. Botanik, Universität Zürich, Pelikanstrasse 40, Zürich (1961).
Weidmann, Dr M. G., Laboratoire de Géologie, Université de Lausanne, Lausanne (PB) (1961).

Thailand

Botanical Section, Department of Agriculture, Bangkok (1953).

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Suvarnasuddhi, K., Forest Products Research Division, Royal Forest Dept., Bangkok (1951).

Tunisia

Pottier-Alapetite, Mme, Institut des Hautes Etudes, 8 Rue de Rome, Tunis (1958).

Turkey

Demiriz, Dr H., Universität Istanbul, Institut für Pharmazeutische Botanik und Genetik, Süleymaniye, Istanbul (1956).
Pekmezciler, S., Maltepe Sokagi No. 12, Ankara (PB) (1961).

Uganda

Lind, Dr E. M., Makerere College, The University College of East Africa, P.O. Box 262, Kampala (1959).

Union of South Africa

The Bolus Herbarium, University of Cape Town, Rondebosch, Cape Town (1952).
The Moss Herbarium, Dept. of Botany, University of the Witwatersrand, Johannesburg (1952).
National Botanic Gardens, Kirstenbosch, Newlands, C.P. (1958).
The Bews Botanical Laboratory, University of Natal, P.O. Box 375, *Pietermaritzburg* (1953).
Division of Botany and Plant Pathology, National Herbarium, P.O. Box 994, *Pretoria* (1951).
Departement van Plantkunde, Universiteit van Stellenbosch, Stellenbosch (1953).

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Dyer, Dr R. A., P.O. Box 994, Pretoria (1954).
Killick, D. J. B., Department of Botany, P.O. Box 994, Pretoria (1954).
Levyns, Mrs M. R., Dept. of Botany, University of Cape Town, Rondebosch (1951).
Pocock, Dr M. A., 18 Milner Street, Grahamstown, C.P. (1954).
Reynolds, Dr G. W., P.O. Box 234, Mbabane (1955).
Weintroub, Miss D., Transvaal Chamber of Mines, P.O. Box 809, Johannesburg (1952).
Zinderen-Bakker, Dr E. M. van, Universiteit O.V.S., Bloemfontein (1960).

United States

University of New Mexico Library, Albuquerque, N. Mex. (1955).
The Herbarium, Dept. of Botany, Iowa State College, *Ames*, Iowa (1952).
Library, Los Angeles State and County Arboretum, Box 688, *Arcadia*, Calif. (1961).
University of Georgia Libraries, Acquisitions Division, Athens, Ga. (1958).
Ohio University Library, Athens, Ohio (1961).
U.S. Dept. of Agriculture, Region 8, Headquarters, *Atlanta*, Ga. (1961).
The University of Texas Library, Austin 12, Tex. (1955).
Louisiana State University, Library, Serials Division, *Baton Rouge 3*, La. (1952).
Biology Library, Indiana University, College of Arts and Sciences, Bloomington, Ind. (1953).
University of Colorado Museum, Boulder, Colorado (1961).
Brooklyn Botanic Garden, 1000 Washington Avenue, *Brooklyn 25*, N.Y. (1951).
Gray Herbarium, Harvard University, 22 Divinity Avenue, *Cambridge 38*, Mass. (1952).
Farlow Herbarium and Library, 20 Divinity Avenue, *Cambridge 38*, Mass. (1957).
Serials Department, University of North Carolina Library, Chapel Hill, N.C. (1956).
Chicago Natural History Museum, Roosevelt Road and Lake Shore Drive, *Chicago 5*, Ill. (1952).
Rancho Santa Ana Botanic Garden, 1500 North College Ave., *Claremont*, Calif. (1951).
Science Library, Southern Methodist University, Dallas 22, Tex. (1951).
Michigan State University, Dept. of Botany and Plant Pathology, *East Lansing*, Mich. (1952).
Dept. of Biology, Kansas State Teachers College, Emporia, Kan. (1957).
Calvin College Library, 1345 Franklin Street, S.E., *Grand Rapids 6*, Mich. (1961).

University of Hawaii Library, Honolulu 14, Hawaii (1952).

Shell Development Company, 3737 Bellaire Blvd., *Houston 25,* Tex. (1958).

State University of Iowa, Dept. of Botany, *Iowa City,* Iowa (1951).

Bailey Hortorium, Sage Place, *Ithaca,* N.Y. (1951).

Longwood Gardens, Education Department, Kennett Square, Pa. (1957).

Traub Herbarium, American Plant Life Society, 5804 Camino de la Costa, *La Jolla,* Calif. (1955).

Library, Utah State University, Logan, Utah (1961).

University of California, Biomedical Library, Medical Center, Los Angeles 24, Calif. (1960).

Kansas State University Library, Manhattan, Kan. (1959).

Joint University Libraries, Nashville 5, Tenn. (1960).

Southern Forest Experiment Station, 704 Lowich Bldg., 2026 St. Charles Ave., *New Orleans 13,* La. (1960).

New York Botanical Garden, Bronx Park, *New York 58,* N.Y. (1951).

The Rachel McMasters Miller Hunt Botanical Library, Carnegie Institute of Technology, *Pittsburgh 13,* Pa. (1960).

Botanical Library, Texas Research Foundation, P.O. Box 43, *Renner,* Tex. (1952).

The Library, University of California, Riverside, Calif. (1958).

California Academy of Sciences Library, Golden Gate Park, *San Francisco 18,* Calif. (1951).

Missouri Botanical Garden, 2315 Tower Grove Avenue, *St Louis 10,* Mo. (1955).

Library, Florida Presbyterian College, St. Petersburg, Fla. (1961).

Jersey Production Research Company, 1133 North Lewis Avenue, *Tulsa 10,* Okla. (1959).

Dept. of Botany, U.S. National Museum, Smithsonian Institution, *Washington,* D.C. (1955).

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Aaron, I. M., 602 Sunset Drive, Butler, Pa. (1955).

Abbott, Mrs M. Langford, Dept. Biological Sciences, University of Cincinnati, Cincinnati 21, Ohio (1958).

Adams, Dr W. P., Division of Botany, Florida State University, Tallahassee, Fla. (1957).

Ahmadjian, Prof. V., Department of Biology, Clark University, Worcester, Mass. (1959).

Allen, Dr C. K., The New York Botanical Garden, Bronx Park, New York 58, N.Y. (1951).

Allen, Dr O. N., 212-A Bacteriology Bldg., University of Wisconsin, Madison 6, Wisc. (1951).

Anderson, Dr D. E., Dept. of Botany, Humboldt State College, Arcata, Calif. (1959).

Anderson, Dr J. M. F., Jr., Arkansas State College, Box 162, State College, Arkansas (1951).

Anderson, L. E., Dept. of Botany, Duke University, Durham, N.C. (1957).

Andresen, Dr J. W., Dept. of Forestry, Michigan State University, East Lansing, Mich. (1961).

Andrews, Dr H. N., Botany School, Washington University, St Louis 5, Mo. (PB) (1955).

Archer, Dr W. A., 4317 Rowalt Drive, College Park, Md. (1952).

Arnold, Dr Ch. A., Division of Botany, University of Michigan, Ann Arbor, Mich. (1955).

Axelrod, Dr D. I., Dept. of Geology, University of California, Los Angeles 24, Cal. (PB) (1955).

Ayensu, Edward S., c/o Dr. W. L. Stern, Division of Woods, Smithsonian Institution, Washington 25, D.C. (1961).

Bache-Wiig, Dr S., Dept. of Botany, Burton Hall, Smith College, Northampton, Mass. (1952).

Bacigalupi, Dr R., Jepson Herbarium, Dept. of Botany, University of California, Berkeley 4, Cal. (1951).

Baker, G. R., Dept. of Botany, University of Minnesota, Minneapolis 14, Minnesota (1958).

Baker, Dr W. H., Dept. of Biol. Sci., University of Idaho, Moscow, Idaho (1952).

Baldwin, Dr J. T., Jr., Box 1588, Williamsburg, Va. (1952).

Banks, Prof. H. P., Dept. of Botany, Cornell University, Ithaca, N.Y. (PB) (1955).

Barclay, Prof. H. G., Dept. of Botany, University of Tulsa, Tulsa 4, Okla. (1961).

Barghoorn, Prof. E. S., Harvard University, Biological Laboratories, Cambridge 38, Mass. (PB) (1955).

Barneby, R. C., Stirling House, Greenport, L.I., N.Y. (1951).

Bartoo, Miss H. V., 1341 Hillerest Avenue, Kalamazoo, Mich. (PB) (1961).

Baxter, R. W., Dept. of Botany, University of Kansas, Lawrence, Kansas (PB) (1955).

Beal, E. O., Dept. of Botany, North Carolina State College, Raleigh, N.C. (1958).

Beaman, Dr J. H., Dept. of Botany & Plant Pathology, Michigan State University, East Lansing, Mich. (1953).

Beard, Dr H., Dept. of Botany, University of California, Berkeley 4, Cal. (1952).

Beck, C. B., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (PB) (1961).

Becker, H. F., New York Botanical Garden, Bronx Park, New York 58, N.Y. (PB) (1961).

Bell, C. R., Dept. of Botany, University of North Carolina, Chapel Hill, N.C. (1956).

Benjamin, C. R., National Fungus Collections, Plant Industry Station, Beltsville, Md. (1958).

Benninghoff, W. S., University of Michigan, Dept. of Botany, Ann Arbor, Mich. (PB) (1958).

Benson, Prof. L., Dept. of Botany, Pomona College, Claremont, Cal. (1951).

Berry, Dr E. W., College Station, Durham, N.C. (PB) (1955).

Beyer, Dr A. F., Midwestern University, Box 1, Wichita Falls, Texas (PB) (1955).

Bigelow, Mrs H. E., Dept. of Botany, University of Massachusetts, Amherst, Mass. (1956).

Birdsey, Dr M. R., Dept. of Botany, University of Miami, Coral Gables 46, Fla. (1955).

Blakley, E. R., Santa Barbara Botanic Garden, Santa Barbara, Cal. (1951).

Blasdell, R. F., Division of Sciences, Louisiana State University in New Orleans, Lake Front, New Orleans 22, La. (1956).

Bodman, Sister M. C., 1020 West Sheridan Road, Mundelein College, Chicago 40, Ill. (1951).

Bogle, A. L., Dept. of Botany, University of Minnesota, Minneapolis 14, Minnesota (1960).

Booth, Prof. W. E., Dept. of Botany and Bacteriology, Montana State College, Bozeman, Mont. (1951).

Bowerman, Miss M. L., University of California Herbarium, Berkeley 4, Cal. (1952).

Breen, Mrs R. S., 1806 Croydon Drive, Tallahassee, Fla. (1959).

Brizicky, Dr George K., Harvard University Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1961).

Brooks, Prof. R. M., Dept. of Pomology, University of California, College of Agriculture, Davis, Calif. (1960).

Brown, Dr C. A., 1180 Stanford Avenue, Baton Rouge 15, La. (1951).

Brown, Dr D. F. M., Dept. of Biology, Eastern Michigan College, Ypsalanti, Mich. (1954).

Brown, J. R., 132 W. Union Street, Pasadena 1, Cal. (1959).

Brown, R. M., 203 Morning Sun Avenue, Cottage 4, Mill Valley, Cal. (1958).

Bryan, Dr E. H., Jr., Bernice P. Bishop Museum, Honolulu 17, Hawaii (1951).

Buchanan, R. E., Iowa State College, Room 316, Curtiss Hall, Ames, Iowa (1951).

Bunting, George S., L. H. Bailey Hortorium, Cornell University, Ithaca, N.Y. (1961).

Cahoon, Mrs E. J., Botany Department, University of Minnesota, Minneapolis 14, Minn. (PB) (1960).

Camp, Dr W. H., Dept. of Botany, University of Connecticut, Storrs, Conn. (1951).

Canham, Miss Susan C., 554 West 114 Street, New York 25, N.Y. (1961).

Canright, Dr J. E., Dept. of Botany, Indiana University, Bloomington, Ind. (PB) (1955).

Carroll, G., Sage Drive, Warrentownship, Plainfield, N.J. (1961).

Chambers, Dr K. L., Dept. of Botany, Oregon State College, Corvallis, Ore. (1954).

Channell, Dr R. B., Dept. of Biology, Vanderbilt University, Nashville 5, Tenn. (1954).

Charette, L. A., 27 Ferguson Avenue, Burlington, Vt. (1953).

Chase, Mrs A., United States National Museum, Smithsonian Institution, Washington 25, D.C. (1952).

Chi Ling Chen, Dept. of Anatomy, Yale University, Medical School, New Haven, Conn. (1957).

Clark, R. B., Rutgers University, New Brunswick, N.J. (1951).

Clausen, Dr R. T., Dept. of Botany, Cornell University, Ithaca, N.Y. (1951).

Clayton, T., Birchwood Lane, White Bear Lake 10, Minn. (1954).

Clevenger, Dr S., 717 South Henderson Street, Bloomington, Ind. (1959).

Clewell, A. F., Dept. of Botany, Indiana University, Bloomington, Ind. (1960).

Cobb, B., 116 East 66th Street, New York 21, N.Y. (1954).

Cohn, J., 1010 Parkside Drive, Oak Lane Manor, Wilmington 3, Delaware (1953).

Colinvaux, Dr L. H., Dept. of Botany, Duke University, Durham, N.C. (1958).

Collins, Dr D. C., Suite n. 503, 7046 Hollywood Boulevard, Hollywood 28, Cal. (1951).

Collins, H. R., Ohio Division of Geological Surveys, 155 South Oval Dr., Columbus 10, Ohio (PB) (1959).

Conklin, Prof. H. C., Columbia University in the City of New York, Dept. of Anthropology, New York 27, N.Y. (1958).

Constance, Dr L., Herbarium of the University of California, Berkeley 4, Cal. (1953).

Cooke, W. M. Bridge, 1135 Wilshire Avenue, Cincinnati 30, Ohio (1951).

Cooley, G. R., Hickory Hill, Rensselaerville, N.Y. (1956).

Cooperrider, T. S., Dept. of Biology, Kent State University, Kent, Ohio (1958).

Core, Dr E. L., Dept. of Biology, West Virginia University, Morgantown, W.Va. (1955).

Correll, Dr D. S., Texas Research Foundation, Renner, Tex. (1951).

Couch, Dr J. N., University of North Carolina, Chapel Hill, N.C. (1959).

Cowan, Dr R. S., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1951).

Cridland, A. A., Dept. of Botany, Kansas University, Lawrence, Kans. (PB) (1958).

Cronquist, Dr A., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1954).

Cross, Dr A. T., Pan American Petroleum Corp., Research Center, P.O. Box 591, Tulsa 2, Okla. (PB) (1955).

Cuatrecasas, Dr J., Smithsonian Institution, U.S. National Museum, Dept. of Botany, Washington 25, D.C. (1951).

Culberson, Dr W. L., Dept. of Botany, Duke University, Durham, N.C. (1952).

Cull, Miss Irene, 200 Dixon Avenue, Peoria, Ill. (1951).

Cummins, Prof. G. B., Botany and Plant Pathology, Life Science Bldg., Purdue University, Lafayette, Ind. (1961).

Dahl, Prof. A. Orville, Dept. of Botany, University of Minnesota, Minneapolis 14, Minn. (1952).

Daily, W. A., Dept. of Botany, Butler University, Indianapolis 7, Ind. (1956).

Dansereau, Dr P., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1951).

Daoud, H. S., Dept. of Botany, Duke University, Durham, N.C. (1958).

Darrah, W. C., Spruce Hill, R.D.I., Gettysburg, Pa. (PB) (1960).

Daugherty, L. H., San Jose State College, San Jose 14, Cal. (PB) (1960).

Davidson, R. A., 203 East Locust Street, Davenport, Iowa (1957).

Dawson, E. Yale, Box 228, R.F.D. 1, Solvang, Cal. (1952).

Decker, H. F., Dept. of Botany, Yale University, New Haven, Conn. (1961).

Degener, Dr O., Waialua, Oahu, Hawaii (1959).

DeJong, D. C. D., Botany & Plant Pathology, Michigan State University, East Lansing, Mich. (1961).

Delevoryas, Th., University of Illinois, Urbana, Ill. (PB) (1955).

Denham, D. L., Dept. of Botany, University of Colorado Museum, Boulder, Colo. (1960).

Denison, Dr W. C., Dept. of Botany, Swarthmore College, Swarthmore, Pa. (1956).

Denton, G. H., The Youngstown Street and Tube Company, Youngstown 1, Ohio (PB) (1961).

DePoe, C. E., Dept. of Biology, Northeast Louisiana State College, Monroe, La. (1959).

DeWolf, Dr G. P. de, c/o Division of Science and Mathematics, Georgia Southern College, Statesboro, Georgia (1957).

Diehl, Dr W. W., 1512 N. McKinley Road, Arlington 5, Va. (1951).

Dilcher, D., Dept. of Botany, University of Illinois, Urbana, Ill. (1961).

Dodge, Dr C. W., Henry Shaw School of Botany, Washington University, St Louis 5, Mo. (1951).

Dorf, Prof. E., Dept. of Geology, Princeton University, Princeton, N.J. (PB) (1955).

Dress, Dr W. J., Bailey Hortorium, Cornell University, Ithaca, N.Y. (1958).

Dressler, R. L., Missouri Botanical Garden, 2315 Tower Grove Avenue, St Louis 10, Mo. (1953).

Drouet, Dr F., Academy of Natural Sciences, 19th and the Parkway, Philadelphia 3, Pa. (1953).

Duman, Rev. M. G., Dept. of Biology, St. Vincent College, Latrobe, Pa. (1951).

Duncan, Dr W. H., Dept. of Botany, University of Georgia, Athens, Ga. (1952).

Dunn, Dr D. B., Dept. of Botany, University of Missouri, Columbia, Mo. (1954).

Earle, Dr W. H., Desert Botanical Garden of Arizona, Tempe, Ariz. (1951).

Earle Smith, Jr., Dr C., Chicago Natural History Museum, Chicago 5, Ill. (1961).

Easterly, Dr N. W., Dept. of Biology, Bowling Green State University, Bowling Green, Ohio (1959).

Ebinger, J. E., Osborn Botanical Laboratory, Yale University, New Haven, Conn. (1958).

Eggert, D. A., Dept. of Botany, University of Illinois, Urbana, Ill. (1958).

Ehrle, Dr E. B., State University College of Education, Geneseo, N.Y. (1956).

Elias, Dr M. K., Research Institute, University of Oklahoma, Norman, Okla. (PB) (1955).

Ellis, Dr J. J., Northern Utilization Research and Development Division, A.R.S., U.S. Dept. of Agriculture, 1815 North University Street, Peoria Ill. (1960).

Engelhardt, D. W., Pan American Petroleum Corporation, Research Center, P.O. Box 591, Tulsa 2, Okla. (PB) (1960).

Erbisch, F. H., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Ernst, W. R., Harvard University Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1961).

Eshbaugh, W. H., Dept. of Botany, Indiana University, Bloomington, Ind. (1961).

Evers, Dr R. A., 393 Natural Resources Bldg., Urbana, Ill. (1961).

Evitt, W. R., Jersey Production Research Company, 1133 North Lewis Avenue, Tulsa 10, Okla. (1958).

Ewan, Prof. J., Tulane University, New Orleans 18, La. (1952).

Eyde, R. H., Division of Woods, U.S. National Museum, Washington 25, D.C. (1961).

Faruqi, S. A., Dept. of Botany and Plant Pathology, Oklahoma State University, Stillwater, Okla. (1959).

Fay, M. J., Dept. of Botany, Wisconsin State College, Eau Claire, Wisc. (1952).

Felix, C. J., Sun Oil Company, 503 N. Central Expressway, Richardson, Texas (PB) (1959).

Ferris, Mrs R. S., Dudley Herbarium, Natural History Museum, Stanford University, Stanford, Cal. (1951).

Fetters, Th. W., Botany Department, Indiana University, Bloomington, Ind. (PB) (1960).

Fisher, Dr T. R., Botany Dept., Ohio State University, Columbus 10, Ohio (1959).

Flagg, Dr R. O., Blandy Experimental Farm, University of Virginia, Boyce, Va. (1961).

Flory, Dr Walter S., Jr., Blandy Experimental Farm, University of Virginia, Boyce, Va. (1961).

Flowers, Prof. S., Dept. of Botany, University of Utah, Salt Lake City 1, Utah (1952).

Fogg, Dr J. M., Jr., Morris Arboretum, University of Pennsylvania, 9419 Meadowbrook Avenue, Philadelphia 18, Pa. (1959).

Fosberg, Dr F. R., 212 Holmes Run Road, Falls Church, Va. (1951).

Frodin, D. G., Chicago Natural History Museum, Chicago, Ill. (1961).

Fulford, Dr M., Dept. of Botany, University of Cincinnati, Cincinnati 21, Ohio (1951).

Fuller, Dr A. M., Dept. of Botany, Milwaukee Public Museum, Milwaukee 3, Wisc. (1952).

Garay, L. A., Oakes Ames Orchid Herbarium, 22 Divinity Ave., Cambridge 38, Mass. (1958)

Gier, L. J., Dept. of Biology, William Jewell College, Liberty, Mo. (1951).

Gilkey, Dr H. M., 136 N. 30th Street, Corvallis, Ore. (1951).

Gillespie, W. H., Dept. of Botany, West Virginia University, Morgantown, W.Va. (1958).

Gillet, Dr G. W., Dept. of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1957).

Gillis, W. T., Dept. of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1958).

Glassman, S. F., Division of Biological Sciences, University of Illinois, Návy Pier, Chicago 11, Ill. (1961).

Godfrey, Dr R. K., Dept. of Botany, Florida State University, Tallahassee, Fla. (1955).

Goodman, Dr G. J., Dept. of Plant Sciences, University of Oklahoma, Norman, Okla. (1951).

Gordon, Dr R. B., Darlington Herbarium, State Teachers College, West Chester, Pa. (1952).

Gould, S. W., Thunder Mill, Opening Hill Road, Madison, Conn. (1957).

Graffins, J. H., Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1961).

Graham, Mrs S., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1960).

Grant, M. L., Iowa State Teachers College, Cedar Falls, Iowa (1951).

Grassl, Dr C. O., Box 156, Canal Point, Fla. (1959).

Gray, Dr J., Geochronology Laboratories, University of Arizona, Tucson, Arizona (PB) (1958).

Gray, N. E., Anatomy Building, Emory University, Atlanta, Ga. (1959).

Grayson, Dr J. F., Magnolia Petroleum Company, Field Research Laboratory, Box 900, Dallas 21, Texas (PB) (1959).

Green, P. S., The Arnold Arboretum, Jamaica Plain 30, Mass. (1951).

Griffiths, A. Jr., Los Angeles State & County Arboretum, 301 North Baldwin Avenue, Arcadia, Cal. (1954).

Guennel, Dr G. K., Ohio Oil Co., P.O. Box 269, Littleton, Colo. (PB) (1955).

Haas, Dr Th. Ph., Philadelphia College of Pharmacy and Science, Philadelphia 4, Pa. (1952).

Habib, D., Dept. of Geology, The Pennsylvania State University, University Park, Pa. (PB) (1961).

Hale, M. E., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1959).

Hall, Dr J. W., Dept. of Botany, University of Minnesota, Minneapolis 14, Minn. (PB) (1956).

Hall, Dr M. T., Head, Dept. of Botany, Butler University, Indianapolis, Ind. (1951).

Hankins, F. W., 300 Park Avenue, Collegeville, Pa. (PB) (1960).

Hanlin, Dr R. T., Dept. of Plant Pathology, Georgia Experiment Station, Experiment, Ga. (1959).

Hardin, Dr J. W., Dept. of Botany, North Carolina State College, Raleigh, N.C. (1951).

Harthill, M. P., 913 E 5th., Pt. Angeles, Wash. (1960).

Harvey, Mrs D. R., 5801 Adelaide Ave., San Diego 15, Cal. (1952).

Harvey, Dr L. H., The Herbarium, Montana State University, Missoula, Mont. (1954).

Hatcher, R. E., University of Wisconsin-Milwaukee, 600 West Kilbourn Ave., Milwaukee 3, Wisc. (1957).

Hauke, R. L., Dept. of Botany, University of Rhode Island, Kingston, R.I. (1958).

Head, Dr S. C., Dept. of Biological Sciences, California State Polytechnic College, San Luis Obispo, Calif. (1957).

Heckard, L. R., Dept. of Botany, University of California, Berkeley 4, Calif. (1955).

Heiser, Ch. B. Jr., Dept. of Botany, Indiana University, Bloomington, Ind. (1951).

Hendricks, Dr A. J., Science Division, Colorado State College, Greeley, Colo. (1957).

Henry, Dr L. K., Carnegie Museum, Pittsburg 13, Pa. (1951).

Hermann, Dr F. J., Forest Service Herbarium, U.S. Dept. Agric., Room 242, Liberty Loan Bldg., Washington 25, D.C. (1951).

Hilferty, Dr F. J., State University, Department of Biology, Bridgewater, Mass. (1959).

Hille, F. K., 410 Rose Lane, Lexington, Ky. (1959).

Hiltunen, J., Dept. of Biology, Wayne State University, Detroit 2, Mich. (1958).

Hocking, Dr G. M., Auburn University, Auburn, Ala. (1954).

Hodge, Dr W. H., 5413 Center Street, Chevy Chase 15, Md. (1952).

Hoffmeister, W. S., Jersey Production Research Company, 1133 North Lewis Ave., Tulsa 10, Okla. (1958).

Hollensen, R. H., Dept. of Biological Sciences, University of Cincinnati, Cincinnati 21, Ohio (1958).

Holm, Dr R. W., Dudley Herbarium, Natural History Museum, Stanford, Cal. (1951).

Houk, R. D., Department of Biological Science, Florida State University, Tallahassee, Fla. (1960).

Howard, Dr G. E., Dept. of Botany, University of Washington, Seattle 5, Wash. (1951).

Howard, Dr R. A., Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Mass. (1955).

Howell, Dr J. Th., California Academy of Sciences, Golden Gate Park, San Francisco 18, Cal. (1951).

Hu, Dr S., Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Hueber, F. M., Dept. of Botany, Cornell University, Ithaca, N.Y. (1960).

Hughes III, Dr G. C., Dept. of Biology, Kansas State Teachers College, Emporia, Kansas (1958).

Hulbert, L. C., Dept. of Botany, Kansas State College, Manhattan, Kansas (1956).

Hurst, Dr F. M., Baylor University, Waco, Texas (1959).

Hutchison, P. C., Botanical Garden, University of California, Berkeley 4, Cal. (1952).

Huttleston, D. G., Longwood Gardens, Kennett Square, Pa. (1951).

Hyypio, P. A., Botanical Gardens, University of Michigan, Ann Arbor, Mich. (1953).

Iltis, H., Herbarium, Dept. of Botany, University of Wisconsin, Birge Hall, Madison, Wisc. (1951).

Ingram, J., L.H. Bailey Hortorium, Cornell University, Ithaca, N.Y. (1959).

Irwin, H. S., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1957).

Isely, D., Dept. of Botany, Iowa State College, Ames, Iowa (1951).

Jablonski, Dr E., Apt. A. 52 — Hudson View Gardens, 183rd Street and Pinehurst Avenue, New York 33, N.Y. (1958).

Jackson, D. C., Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1961).

Jackson, Dr R. C., Dept. of Botany, The University of Kansas, Lawrence, Kansas (1955).

James, Dr Ch. W., Dept. of Botany, University of Georgia, Athens, Ga. (1956).

Jervis, R. N., Dept. of Biology, East Texas State College, Commerce, Tex. (1953).

Johnson, Dr J. H., Dept. of Geology, Colorado School of Mines, Golden, Colo. (PB) (1955).

Johnston, Prof. M. C., Dept. of Botany, University of Texas, Austin 12, Texas (1955).

Jones, Dr G. Neville, University of Illinois, Dept. of Botany, Urbana, Ill. (1952).

Kapadia, Dr Z. J., Dept. of Range and Forestry, Agricultural & Mechanical Coll ge of Texas, College Station, Texas (1956).

Keck, Dr D. D., National Science Foundation, Washington 25, D.C. (1951).

Keefe, Rev. A. M., St Norbert College, West De Pere, Wisc. (1951).

Kiem, Stanley C., Fairchild Tropical Gardens, 10901 Old Cutler Road, Miami 56, Fla. (1958).

Kimnach, Mr M., 5918 Jordan Avenue, El Cerrito 9, Cal. (1957).

Knobloch, I. W., Dept. of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1959).

Kobuski, Dr C. E., Arnold Arboretum and Gray Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Koch, Dr L. F., 1212 Garden Hills Drive, Champaign, Ill. (1951).

Koch, S. D., Swarthmore College, Wharton Hall, Swarthmore, Pa. (1961).

Koeppen, R., Forest Products Laboratory, Madison 5, Wisconsin (1959).

Korf, Dr R. P., Dept. of Plant Pathology, New York State College of Agriculture, Cornell University, Ithaca, N.Y. (1951).

Kral, R., Virginia Polytechnic Institute, Dept. of Biology, Blacksburg, Va. (1958).

Kruckeberg, Dr A. R., Dept. of Botany, University of Washington, Seattle 5, Wash. (1955).

Krukoff, B. A., c/o Merck & Co. Inc., 100 Church Street, New York 7, N.Y. (1951).

Kucera, Dr C. L., Dept. of Botany, University of Missouri, Columbia, Mo. (1952).

Lakela, Prof. O., University of South Florida, Tampa, Fla. (1952).

Lane, Dr I. E., Dept. of Botany, University of Hawaii, Honolulu 14, Hawaii (1952).

Langman, Mrs I. K., 3509 Baring Street, Philadelphia 4, Pa. (1953).

Latimer, I. S., Jr., Geological & Economic Survey, Morgantown, W. Virginia (PB) (1959).

Lawrence, Prof. G. H. M., Hunt Botanical Library, Carnegie Institute of Technology, Pittsburgh 13, Pa. (1951).

Lawton, Dr E., Botany Department, University of Washington, Seattle 5, Wash. (1956).

LeBlanc, A., Shell Oil Company, P.O. Box 1509, Midland, Tex. (PB) (1958).

Lee, F. P., 7401 Glenbrook Road, Bethesda 14, Md. (1959).

Leffingwell, H. A., Jersey Production Research Company, 1133 North Lewis Ave., Tulsa 10, Okla. (1958).

Leisman, G. A., Dept. of Biology, Kansas State Teachers College, Emporia, Kansas (PB) (1959).

Lellinger, D. B., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1959).

Lems, Prof. K., Department of Biological Sciences, Goucher College, Towson, Baltimore 4, Md. (1960).

Leonard, E. C., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1957).

Leppik, Dr E. E., Plant Introduction Station, Iowa State College, Ames, Iowa (1951).

Lewis, Dr H., Herbarium, Division of Botany, University of California, Los Angeles 24, Cal. (1953).

Lewis, W. H., Dept. of Biology, Stephen F. Austin College, Nacogdoches, Tex. (1952).

Li, Dr H., Morris Arboretum, Chestnut Hill, Philadelphia 18, Pa. (1951).

Little, Dr E. L., Jr., U.S. Dept. of Agriculture, Forest Service, Washington 25, D.C. (1951).

Lloyd, Dr John T., The Lloyd Library and Museum, 309 West Court Street, Cincinnati 2, Ohio (1953).

Long, Dr C. R., Dept. of Botany, U. of Mass., Amherst, Mass. (1960).

Longpre, E. K., Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1961).

Loughridge, Dr G. A., Culver Stockton College, Canton, Mo. (1951).

Lowy, Dr B., Dept. of Botany, Louisiana State University, Baton Rouge, La. (1954).

Lundell, Dr C. L., Texas Research Foundation, Renner, Tex. (1951).

McCleary, Dr J. A., 1249 Luanne Ave., Fullerton, Cal. (1960).

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McClure, Dr F. A., 5507 Charles Street, Bethesda, Md. (1955).

McGinitie, H. D., 2331 Atlas Peak Road, Napa, Calif. (PB) (1961).

McGregor, Prof. R. L., Dept. of Botany, University of Kansas, Lawrence, Kan. (1951).

McVaugh, Dr R., Herbarium, Museums Building, University of Michigan, Ann Arbor, Mich. (1951).

Maguire, Dr B., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1952).

Mahler, Wm. F., Department of Biology, Hardin-Simmons University, Abilane, Texas (1960).

Mamay, Dr S. H., U.S. Geological Survey, 338 U.S. National Museum, Washington 25, D.C. (1954).

Manning, Prof. W. E., Botanical Laboratory, Bucknell University, Lewisburg, Pa. (1958).

Martin, Prof. G. W., State University of Iowa, Iowa City, Iowa (1951).

Martin, J. S., 1321 Bayon Road, Route 2, Bellingham, Wash. (1954).

Martin, Dr P. S., Geochronology Laboratories, University of Arizona, Tucson, Arizona (PB) (1961).

Mason, Ch. T., Jr., Dept. of Botany, University of Arizona, Tucson, Ariz. (1953).

Mason, Dr H. L., Herbarium of the University of California, Berkeley 4, Cal. (1953).

Mathias, Dr M. E., Div. of Botany, University of California, Los Angeles 24, Cal. (1951).

Mauldin, Mrs M. P., Southwestern Seed Service, Route 2, Box 220, Waco, Tex. (1951).

Mehlquist, Prof. G. A. L., Plant Science Dept., University of Connecticut, Storrs, Conn. (1951).

Menzel, Mrs M. Y., U.S.D.A., Florida State University, Tallahassee, Fla. (1959).

Metz, Sister M. C., Our Lady of the Lake College, San Antonio 7, Tex. (1951).

Meyer, Dr F. G., Plant Introduction Section, U.S. Department of Agriculture, Beltsville, Md. (1952).

Mickel, Dr J. T., Dept. of Botany, Iowa State University, Ames, Iowa (1958).

Middleton, J. T., Div. of Plant Pathology, University of California, Citrus Experiment Station, Riverside, Cal. (1951).

Miller, A. H., 1602 14 Street, N.W., Washington 9, D.C. (1956).

Miller, Dr Helena A., Dept. of Biology, Duquesne University, Pittsburg 19, Pa. (1955).

Miller, Dr Harvey A., Department of Botany, Miami University, Oxford, Ohio (1960).

Mohlenbrock, R. H., Dept. of Botany, Southern Illinois University, Carbondale, Ill. (1958).

Moldenke, Dr H. N., 15 Glenbrook Avenue, Yonkers 5, N.Y. (1951).

Moore, Dr D. M., 506 Vanderventer Ave., Fayetteville, Ark. (1951).

Moore, Dr H. E., Jr., Bailey Hortorium, Cornell University, Ithaca, N.Y. (1951).

Moran, Dr R. V., Natural History Museum, Balboa Park, San Diego, Cal. (1952).

Morley, Dr Th., Dept. of Botany, University of Minnesota, Minneapolis 14, Minn. (1951).

Morton, C. V., Division of Ferns, Smithsonian Institution, Washington 25, D.C. (1952).

Mosquin, Th., Dept. of Botany, University of California, Los Angeles 24, Cal. (1956).

Muller, Prof. C. H., University of California, Santa Barbara College, Santa Barbara, Cal. (1951).

Mullins, Mrs J., 4762 Second Blvd., Apt. 305, Detroit 1, Mich. (1959).

Nevling, L. I., Jr., Harvard University Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1959).

Nicolson, D. H., L.H. Bailey Hortorium, Cornell University, Ithaca, N.Y. (1959).

Norem, W. L., c/o Richfield Oil Corp., 5900 Cherry Avenue, Long Beach 5, Calif. (PB) (1960).

Norman, Miss E. M., 221 Durand Street, East Lansing, Mich. (1955).

Ogden, Dr E. C., University of State of New York, New York State Museum, Albany 1, N.Y. (1951).

Ornduff, R., Biology Department, Reed College, Portland 2, Ore. (1960).

Ownbey, Dr G. B., Dept. of Botany, University of Minnesota, Minneapolis, Minn. (1951).

Ownbey, Dr M., Dept. of Botany, State University of Washington, Pullman, Wash. (1951).

Pabst, Dr M. B., Western Washington College, Bellingham, Wash. (PB) (1960).

Palmatier, E. A., Dept. of Botany, University of Rhode Island, Kingston, R.I. (1951).

Palmer, J. G., U.S. Dept. of Agriculture, Forest Service, Plant Industry Station, Beltsville, Md. (1961).

Papenfuss, Dr G. F., Herbarium of the University of California, Berkeley 4, Cal. (1952).

Parker, Dr K. F., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1952).

Patrick, Dr R., The Academy of Natural Sciences of Philadelphia, 19th and the Parkway, Philadelphia 3, Pa. (1951).

Payne, W. W., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1959).

Pederson, R. A., 2904 Barge, Lakima, Wash. (PB) (1960).

Perdue, Dr R. E., U.S.D.A. New Crops Research Branch, Beltsville, Md. (1954).

Perry, Dr L. M., 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Petersen, Dr R. H., Dept. of Biology, University of Buffalo, Buffalo 14, N.Y. (1959).

Pfeifer, H. W., Herbarium, Missouri Botanical Garden, Tower Grove Avenue, St. Louis, Mo. (1961).

Piehl, M. A., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Pierce, R. L., Magnolia Petroleum Company, Box 900, Dallas 21, Texas (PB) (1958).

Pippen, R. W., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Poole, Prof. J. P., Dept. of Botany, Dartmouth College, Hanover, New Hampshire (1955).

Porter, Dr C. L., Rocky Mountain Herbarium, University of Wyoming, Laramie, Wyo. (1951).

Potter, D. E., 2814 South Pittsburg, Tulsa 14, Okla. (1959).

Preece, Dr S. J., Dept. of Botany, Montana State University, Missoula, Mont. (1952).

Prescott, G. W., Dept. of Botany, Michigan State University, East Lansing, Mich. (1958).

Proskauer, Dr J., Dept. of Botany, University of California, Berkeley, Cal. (1956).

Pursell, R. A., The Pennsylvania State University, School of Forestry, Mont Alto Branch, Mont Alto, Pa. (1958).

Radford, Prof. A. E., Dept. of Botany, University of North Carolina, Chapel Hill, N.C. (1951).

Raven, P. H., Rancho Santa Ana Botanic Garden, 1500 North College Avenue, Claremont, Calif. (1958).

Ray, Prof. J. D., Botanical Research, University of South Florida, Tampa 4, Fla. (1956).

Read, R. W., Fairchild Tropical Garden, 10901 Old Cutler Road, Miami 56, Fla. (1960).

Redfearn, Dr P. L., Jr., Southwest Missouri State College, Springfield, Mo. (1959).

Reed, C. F., 10105 Harford Road, Baltimore 34, Md. (1958).

Reed, Prof. F. D., Mount Holyoke College, South Hadley, Mass. (PB) (1955).

Reeder, Dr J. R., Osborn Botanical Laboratory, Yale University, New Haven, Conn. (1951).

Reese, W. D., Dept. of Biology, Southwestern Louisiana Institute, Lafayette, La. (1957).

Reis, Miss S. von, Harvard University Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1956).

Ricker, P. L., 3740 Oliver Street, N.W., Washington 15, D.C. (1951).

Rickett, Dr H. W., New York Botanical Garden, Bronx Park, New York 58 (1951).

Roach, A. W., North Texas State College 5232, Denton, Tex. (1951).

Robertson, Mrs R., 508 South 41st Street, Philadelphia 4, Pa. (1960).

Rock, Dr H. F. L., Dept. of Biology, Vanderbilt University, Nashville 5, Tenn. (1954).

Rogers, C. M., Biology Department, Wayne State University, Detroit 2, Mich. (1958).

Rogers, Dr D. J., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1952).

Rogers, Dr D. P., Dept. of Botany, University of Illinois, Urbana, Ill. (1951).

Rogerson, C. T., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1951).

Roller, Miss J. W., U.S. Forest Service Herbarium, U.S.D.A., 0106 South Building, Washington 25, D.C. (1958).

Rollins, Dr R. C., Gray Herbarium, Harvard University, 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Rose, L. S., California Academy of Sciences, Golden Gate Park, San Francisco, Cal. (1951).

Rowell, Ch. M., Jr., Box 4075, Texas Technical College, Lubbock, Tex. (1954).

Rudd, Miss V. E., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1952).

Rudolph, Dr E. D., Dept. of Botany and Plant Pathology, The Ohio State University, 1735 Neil Avenue, Columbus 10, Ohio (1953).

Runyon, Dr R., Runyon Herbarium, P.O. Box 11, Brownsville, Tex. (1952).

Salamun, Dr P. J., 4732 N. Elkhart Avenue, Milwaukee 11, Wisc. (1951).

Sayre, Prof. G., Russell Sage College, Troy, N.Y. (1951).

Scamman, Miss E., Gray Herbarium, Harvard University, 22 Divinity Avenue, Cambridge 38, Mass. (1951).

Schaeffer, R. L., Jr., 30 North 8th Street, Allentown, Pa. (1951).

Schallert, P. O., M.D., P.O. Box 262, Altamonte Springs, Fla. (1958).

Scharffenberg, R. S., 8407 Campbell Avenue, Arlington, Calif. (1961).

Schemel, Dr M. P., Shell Development Company, 3737 Bellaire Blvd., Houston 25, Tex. (PB) (1955).

Schlising, R. A., Dept. of Botany, University of California, Berkeley 4, Calif. (1961).

Schmitt, W. L., Smithsonian Institution, U.S. National Museum, Dept. of Zoology, Washington 25, D.C. (1952).

Schneider, G., Dept. of Forestry, Michigan State University, East Lansing, Mich. (1961).

Schopf, Dr J. M., Orton Hall, Ohio State University, Columbus 10, Ohio (1951).

Schubert, Dr B. G., Agricultural Research Service, Plant Industry Station, Beltsville, Md. (1952).

Schultes, Dr R. E., Botanical Museum, Harvard University, Cambridge 38, Mass. (1951).

Schuyler, A. E., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Schweinfurth, Ch., 11 Boulder Rd., Wellesley Hills, Mass. (1951).

Scott, A. M., 2824 Dante Street, New Orleans 18, La. (1959).

Scott, Mrs E. E., Apartment 212, 2230 Durant Avenue, Berkeley 4, Cal. (1958).

Scott, Dr R. A., U.S. Geological Survey, Bldg. 25, P. & S. Branch, Denver Federal Center, Denver, Colo. (PB) (1955).

Shaffer, R. L., University Herbarium, University of Michigan, Ann Arbor, Mich. (1952).

Shanks, Prof. R. E., Dept. of Botany, University of Tennessee, Knoxville 16, Tenn. (1952).

Sharp, Dr A. J., Dept. of Botany, University of Tennessee, Knoxville 16, Tenn. (1951).

Shaw, Dr Ch. Gardner, Plant Pathology, State College of Washington, Pullman, Wash. (1954).

Sherff, Dr E. E., 1203 S. Church Street, Hastings, Mich. (1952).

Shetler, S. G., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1958).

Shinners, Dr L. H., Herbarium, Southern Methodist University, Dallas 5, Tex. (1951).

Shutts, Dr C. F., Wasbash College, Crawfordsville, Ind. (1956).

Sierk, H. A., Dept. of Biology, Mac Murray College, Jacksonville, Ill. (1960).

Silva, Dr P. C., Dept. of Botany, University of California, Berkeley 4, Calif. (1951).

Simmons, Dr E. G., Pioneering Research Division, HQ QM R&D Command, QM R&D Center, US Army, Natick, Mass. (1953).

Smith, Dr A. C., Museum of Natural History, Smithsonian Institution, Washington 25, D.C. (1951).

Smith, A. H., Herbarium, University of Michigan, Ann Arbor, Mich. (1951).

Smith, C. F., 2926 Kenmore Place, Santa Barbara, Cal. (1957).

Smith, Dr D. M., University of Illinois, Dept. of Botany, Urbana, Ill. (1959).

Smith, L. B., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1959).

Smith, Mrs L. C., Rt. 4, Box 449, 5045 East Grant Road, Tucson, Ariz. (PB) (1953).

Soderstrom, Th. R., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1958).

Solbrig, Dr O. T., Gray Herbarium, 22 Divinity Avenue, Cambridge 38, Mass. (1961).

Solheim, W. G., Dept. of Botany, University of Wyoming, Laramie, Wyo. (1952).

Spackman, W., Dept. of Geology, Pennsylvania State University, University Park, Pa. (1961).

Speer, J. M., Dept. of Botany and Plant Pathology, Ohio State University, Columbus 10, Ohio (1958).

Stanley, E. A., Pan American Petroleum Corporation, Research Center, P.O. Box 591, Tulsa 2, Okla. (PB) (1959).

Steere, W. C., New York Botanical Garden, Bronx Park, New York 58, N.Y. (1954).

Stern, W. L., Division of Woods, U.S. National Museum, Smithsonian Institution, Washington 25, D.C. (1954).

Stevenson, J. A., Plant Industry Station, U.S. Dept. of Agriculture, Beltsville, Md. (1951).

Stewart, W. N., Dept. of Botany, University of Illinois, Urbana, Ill. (1959).

Stewart Lowther, Dr J., Dept. of Geology, University of Puget Sound, Tacoma 6, Wash. (PB) (1955).

St John, Prof. H., Bishop Museum, Honolulu 17, Hawaii (1954).

Stone, B. C., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1954).

Stone, K. J., 523 E. Mitchell Street, Petoskey, Mich. (1958).

Stoutamire, W. P., Cranbrook Institute of Science, Bloomfield Hills, Mich. (1956).

Stover, L. E., Jersey Production Research Company, 1133 North Lewis Avenue, Tulsa 10, Okla. (1958).

Swallen, Dr J. R., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1951).

Tate Ames, H., Pennsylvania State University, 204 Ihlseng Laboratory, University Park, Pa. (PB) (1959).

Taylor, Ch. A., Dept. of Botany, South Dakota State College, Brookings, S. Dak. (1951).

Templeton, Dr B. C., Los Angeles County Museum, Los Angeles 7, Cal. (1951).

Terrell, E. E., 1519 Glenallan Ave., Silver Spring, Md. (1958).

Thiers, H. D., Dept. of Biology, San Francisco State College, 1600 Holloway, San Francisco, Cal. (1952).

Thomas, Dr J. H., Natural History Museum, Stanford University, Stanford, Calif. (1954).

Thomas, Dr J. L., Dept. of Biology, P.O. Box 1927, University, Alabama (1956).

Thompson, H. J., P.B. 302, Dept. of Botany, University of California, Los Angeles 24, Cal. (1953).

Thomson, Dr J. W., Dept. of Botany, University of Wisconsin, Madison 6, Wisc. (1953).

Thorne, Dr R. F., Dept. of Botany, State University of Iowa, Iowa City, Iowa (1951).

Tomlinson, Dr P. B., Fairchild Tropical Garden, 10901 Old Cutler Road, Miami 56, Fla. (1961).

Torres, A. M., Biology Dept., Wisconsin State College, Oshkosh, Wisc. (1960).

Torrey, Dr G. S., R.F.D. 1, Box 361, Storrs, Conn. (1952).

Totten, Prof. H. R., Dept. of Botany, University of North Carolina, Chapel Hill, N.C. (1951).

Traub, Dr H. P., 5804 Camino de la Costa, La Jolla, Cal. (1951).

Traverse, Dr A., P.O. Box 481, Houston 1, Tex. (PB) (1955).

Tryon, Dr R. M., Jr., Gray Herbarium, Harvard University, 22 Divinity Avenue, Cambridge 38, Mass. (1952).

Tucker, Dr J. M., Botany Division, University of California, College of Agriculture, Davis, Cal. (1952).

Turner, B. L., Dept. of Botany, University of Texas, Austin, Tex. (1952).

Twisselmann, E. C., Cholame, Calif. (1961).

Tylutki, Prof. E. E., Department of Biological Sciences, University of Idaho, Moscow, Idaho (1960).

Van Bruggen, T., Dept. of Botany, State Univ. of South Dakota, Vermillion, S.D. (1960).

Van Schaack, Dr G. B., Missouri Botanical Garden, 2315 Tower Grove Avenue, St Louis 10, Mo. (1951).

Vasek, F. C., Division of Life Sciences, University of California, Riverside, Cal. (1958).

Venard, Dr H., 3959 N. Stratford Road, N.E., Atlanta, Ga. (1952).

Vickery, R. K., Jr., Dept. of Biology, University of Utah, Salt Lake City, Utah (1951).

Vinyard, Prof. W. C., Dept. of Botany, Humboldt State College, Arcata, Cal. (1958).

Voss, Dr E. G., University Herbarium, University of Michigan, Ann Arbor, Mich. (1952).

Wagner, Dr W. H., Jr., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1956).

Wahl, Prof. H. A., Dept. of Botany, Pennsylvania State University, University Park, Pa. (1954).

Walker, Dr E. H., 7413 Holly Avenue, Takoma Park 12, Md. (1951).

Ward, Dr D. B., Dept. of Botany, University of Florida, Gainesville, Fla. (1958).

Waterfall, Dr U. T., Oklahoma State University, Stillwater, Okla. (1952).

Waterman, Miss A. H., Librarian, Pennsylvania Horticultural Society, 389 Suburban Station Building, Philadelphia 3, Pa. (1958).

Weber, Mrs C., Harvard University Herbarium, 22 Divinity Ave., Cambridge 38, Mass. (1958).

Weber, Dr Wm. A., University of Colorado Museum, Boulder, Colo. (1952).

Weber, W. R., Dept. of Biology and Geology, Otterbein College, Westerville, Ohio (1960).

Webster, Dr G. L., Dept. of Biological Sciences, Purdue University, Lafayette, Ind. (1952).

Wehmeyer, Prof. L. E., Dept. of Botany, University of Michigan, Ann Arbor, Mich. (1955).

Weishaupt, Dr Clara, Ohio State University, Columbus 10, Ohio (1960).

Welch, Dr W. H., DePauw University, 112 Bloomington Street, Greencastle, Ind. (1951).

Welden, A. L., Dept. of Botany, Tulane University, New Orleans 18, La. (1959).

Welsh, S. L., Brigham Young University, Provo, Utah (1959).

West, Dr E., Agricultural Experiment Station, University of Florida, Gainesville, Fla. (1952).

Wetmore, C. M., Botany and Plant Pathology, Michigan State University, East Lansing, Mich. (1958).

Wheeler, Dr L. C., Dept. of Botany, University of S. California, Los Angeles 7, Cal. (1954).

Wherry, Prof. E. T., Dept. of Botany, University of Pennsylvania, Philadelphia 4, Pa. (1951).

Whitehouse, Dr E., 3033 Foundren Drive, Dallas 5, Tex. (1953).

Wiggins, Dr I. L., Dudley Herbarium, Natural History Museum, Stanford University, Stanford, Cal. (1951).

Wilbur, Dr R. L., Dept. of Botany, Duke University, Durham, N.C. (1956).

Wilce, R. T., Department of Botany, University of Massachusetts, Amherst, Mass. (1960).

Wilkens, H., 424 South 15th Street, Reading, Pa. (1951).

Williams, Dr L. O., Chicago Natural History Museum, Chicago 5, Ill. (1951).

Wilson, J. S., Dept. of Botany, Kansas State Teachers College, Emporia, Kansas (1958).

Wilson, Dr K. A., San Fernando Valley State College, 18111 Nordhoff Street, Northridge, Calif. (1954).

Wilson, Th. K., Dept. of Biological Sciences, University of Cincinnati, Cincinnati 21, Ohio (1956).

Winslow, Mrs J. D., 65 Edgewood Avenue, Albany 3, N.Y. (PB) (1960).

Wittlake, Dr E. B., Arkansas State College, Box 2, State College, Arkansas (PB) (1960).

Wood, Dr C. E., Arnold Arboretum, 22 Divinity Avenue, Cambridge 38, Mass. (1952).

Wood, J. M., Dept. of Botany, University of Missouri, Columbia, Mo. (PB) (1957).

Wood, Dr R. D., Dept. of Botany, University of Rhode Island, Kingston, R.I. (1952).

Woodson, Dr R. E., Jr., Missouri Botanical Garden, 2315 Tower Grove Ave., St Louis 10, Mo. (1953).

Worthley, Dr E. G., Bonita Avenue, Owings Mills, Md. (1959).

Wurdack, J. J., Dept. of Botany, Smithsonian Institution, Washington 25, D.C. (1952).

Youngken, Prof. H. W., Mass. College of Pharmacy, 179 Longwood Ave., Boston 15, Mass. (1955).

Yuncker, Dr T. G., DePauw University, Greencastle, Ind. (1951).

Ziesenhenne, R., 1130 N. Milpas Street, Santa Barbara, Cal. (1957).

Zimmerman, J. H., 2114 Van Hise Ave., Madison 5, Wisc. (1956).

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Alexeevna, Dr S. I., Komarov Botanical Institute, ul. Popova 2, Leningrad 22 (PB) (1961).

Ivanovna, Dr J. K. A., Komarov Botanical Institute, ul. Popova 2, Leningrad 22 (PB) (1961).

Kolakowsky, Prof. A., Botanical Garden, Soukhumi (PB) (1958).

Prokhanov, Dr Y. I., Nabereshnaya 35, qu. 10, Makhatchkala, Daghestan (1957).

Samylina, V. A., Komarov Botanical Institute, ul. Popova 2, Leningrad 22 (PB) (1961).

Schischkin, Prof. B., Institut Botanique Komarov de l'Académie des Sciences de l'U.R.S.S., Leningrad 22 (1955).

Snigirevsakya, Dr N. S., ul. Popova 2, Komarov Botanical Institute, Leningrad 22 (PB) (1961).

Takhtajan, Prof. Dr Armen, Röntgen Str. 2/25 fl. 62, Leningrad, P-61 (PB) (1961).

Venezuela

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Funkhouser, J. W., c/o Creole Petroleum Corp., Apt. 172, Maracaibo (1958).

Lasser, Dr T., Instituto Botánico, Apartado 2156, Caracas (1952).

Steyermark, Dr J. A., Apartado 2156, Caracas (1957).

Vietnam

Pham-Hoàng-Hô, Departement de Botanique de la Faculté des Sciences de Saigon, Saigon (1960).

Yugoslavia

Mayer, Prof. E., Botanicni Institut, Univerze Ljubljana, Ljubljana (1956).

Šercelj, A., Valvazorjeva 5/II, Ljubljana (1960).

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